Anritsu

Anritsu Demo.Equip.

SERVICE MANUAL

SPECTRUM ANALYZER

MS610C/K

MP MASTER

MA33319

SERVICE MANUAL

SPECTRUM ANALYZER

MS610C/K

1991.03 Ver I

CERTIFICATION

ANRITSU CORPORATION certifies that this instrument has been thoroughly tested and inspected, and found to meet published specifications prior to shipping.
Anritsu further certifies that its calibration measurements are based on the Japanese Electrotechnical Laboratory and Radio Research Laboratory standards.

WARRANTY

All parts of this product are warranted by Anritsu Corporation of Japan against defects in material or workmanship for a period of one year from the date of delivery. In the event of a defect occurring during the warranty period, Anritsu Corporation will repair or replace this product within a reasonable period of time after notification, free-of-charge, provided that: it is returned to Anritsu; has not been misused; has not been damaged by an act of God; and that the user has followed the instructions in the operation manual.

Any unauthorized modification, repair, or attempt to repair, will render this warranty void.

This warranty is effective only for the original purchaser of this product and is not transferable if it is resold.

ALL OTHER EXPRESSED WARRANTIES ARE DISCLAIMED AND ALL IMPLIED WARRANTIES FOR THIS PRODUCT, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO A PERIOD OF ONE YEAR FROM THE DATE OF DELIVERY. IN NO EVENT SHALL ANRITSU CORPORATION BE LIABLE TO THE CUSTOMER FOR ANY DAMAGES, INCLUDING LOST PROFITS, OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES, ARISING OUT OF THE USE OR INABILITY TO USE THIS PRODUCT.

All requests for repair or replacement under this warranty must be made as soon as possible after the defect has been noticed and must be directed to Anritsu Corporation or its representative in your area.

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WARNING

NO OPERATOR SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED PERSONNEL.

CAUTION

FOR CONTINUED FIRE PROTECTION REPLACE
ONLY WITH SPECIFIED TYPE AND RATED FUSE.

Note:

1. This instrument is operable on a nominal voltage of 100 to 127 Vac or 200 to 250 Vac by changing the connections of the power transformer taps (see paragraph 2.2).

   The voltage and current ratings are indicated on the rear panel.

   When changing voltages, change the connections of the power supply transformer, and the voltage and current designation plate on the rear panel. Order the plates from ANRITSU CORP. if needed.

2. In this manual, supply voltage and current rating are represented by [**] Vac and [***] A.

3. The relationships between power supply voltage and current rating are listed below.

**Vac	***A
100 to 127 V	1.0 A
200 to 250 V	0.5 A

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SECTION 1

GENERAL

This is the service manual for the MS610C/K Spectrum Analyzer. It gives the following information:

SECTION 2, MECHANICAL CONFIGURATION AND AC POWER RATING CHANGES:

This section describes the assemblies of the various printed circuit boards (PC boards), and changing the ac line voltage rating.

SECTION 3, CIRCUIT DESCRIPTION:

This section describes electrical operation.

SECTION 4, CIRCUIT DIAGRAM:

This section gives the block diagrams and circuit diagrams for troubleshooting.

SECTION 5, ADJUSTMENT:

This describes instrument adjustment after repair or performance check failure.

SECTION 6, REPLACEABLE PARTS:

This lists the parts given in the circuit diagrams and explains ordering of replacement parts.

Note:

A service kit is available (sold separately). It is comprised of extender cables and connector adapters (see APPENDIX A).

SECTION 2

MECHANICAL CONFIGURATION AND AC POWER RATING CHANGES

2.1 Mechanical Configuration

Table 2-1 lists the mechanical parts. Figures 2-1 to 2-11 show exploded views of the MS610C/K.

CAUTION

Before disassembling/reassembling the MS610C/K, turn OFF the POWER switch on the front panel and disconnect the power supply cord from the ac outlet.

The various figures and mechanical parts list are given below.

Table 2-1 Mechanical Parts List
Fig. 2-1 Cabinet Assembly
Fig. 2-2 Front Panel Assembly
Fig. 2-3 Front Panel Assembly
Fig. 2-4 Front Panel Assembly
Fig. 2-5 CRT Drive Unit Assembly
Fig. 2-6 CRT Display Unit Z13 Assembly
Fig. 2-7 CPU and SCAN Unit Z9, Z10 Assembly
Fig. 2-8 RF Unit Assembly
Fig. 2-9 RF Unit Assembly
Fig. 2-10 IF Section Unit Z3 Assembly
Fig. 2-11 Rear Panel Assembly

Table 2-1 Mechanical Parts List

No.	Part No.	Description	Remark	Qty.	Fig. No.
1	32B7680C	frame, front	2/3 MW-4U	1	2-1
2	32B7666	channel, rear	4U	2	2-1
3	33B20662B	protector		4	2-1
4	34B73668	nut, float		4	2-1
5	32B7668	channel, top	350D	2	2-1
6	32B7669	channel, bottom	350D	2	2-1
7	322B7672	foot, standard		4	2-1
8	34B73660H	tape, trim	4U	2	2-1
9	349B73661J	handle, side	350D	2	2-1
10	33B32348	cover, top		1	2-1
11	33B32349B	cover, bottom		1	2-1
12	33B22471	cover, side, right		1	2-1
13	342B85588B	cover, side, left		1	2-1
14	32E11624	protector, front		2	2-1
15	32E11625	protector, rear		2	2-1
16	34E98915	cushion		1 set	2-1
17	34E91910	key top		3	2-2
18	342E91911	key top		1	2-2
19	342E91911B	key top		2	2-2
20	342E91903B	key top		2	2-2
21	34E91902	key top		1	2-2
22	342E99168	key top		2	2-2
23	342E91903	key top		5	2-2
24	342E73701	knob		2	2-2
25	349B86530D	CRT cover	with CRT filter	1	2-3
26	342E84186	knob	small	1	2-3
27	342E84187	knob	large	1	2-3
28	34B78330B	clamp, panel	bottom	2	2-3
29	34B78330C	clamp, panel	top	2	2-3
30	32B11620A/B	panel, front	A: MS610C, B: MS610K	1	2-3

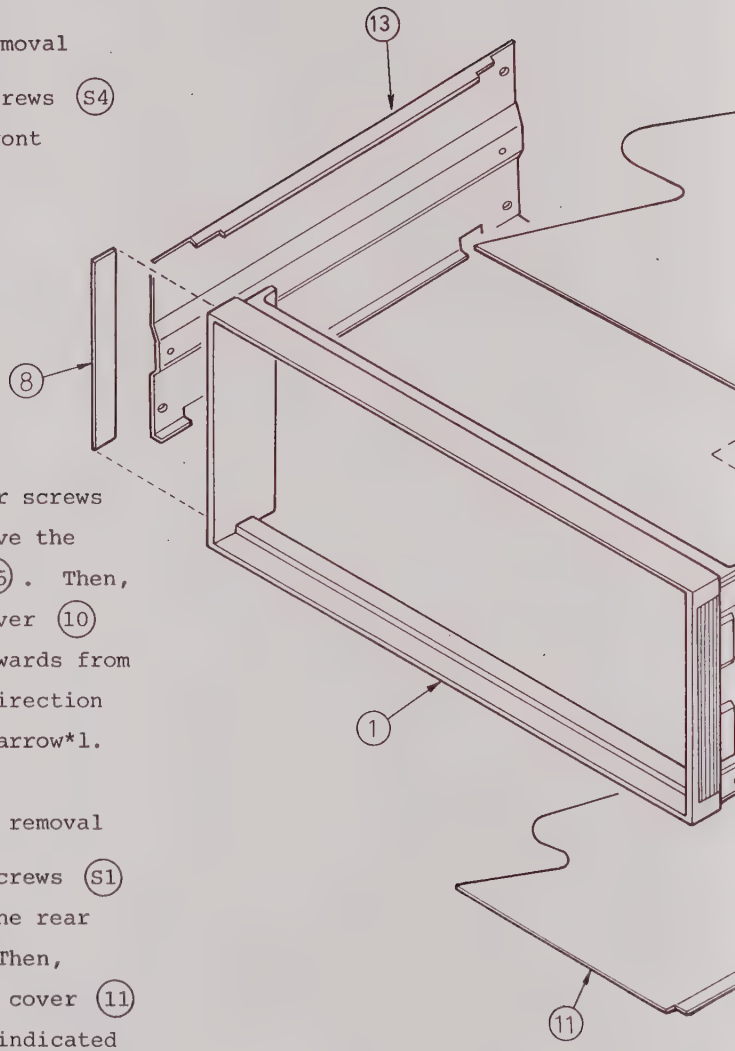
Table 2-1 Mechanical Parts List (Continued)

No.	Part No.	Description	Remark	Qty.	Fig. No.
31	322B11621	panel, sub		1	2-3
32					
33					
34	33B25818	shield cover		1	2-5
35	33B3689B	pillar		2	2-5
36					
37					
38					
39					
40	34B84020	shield cover		1	2-8
41					
42	33B25816	shield panel		1	2-10
43	34B99163	plate		1	2-10
44	332B25810A/B	panel, rear	A: MS610C, B: MS610K	1	2-11
45	34B73670B	cord winder		4	2-11

Cabinet Assembly

(1) Top cover (10) removal

Remove the two screws (S4) and remove the front protector (16).



Remove the four screws (S1) (S4) and remove the rear protector (15). Then, remove the top cover (10) by lifting it forwards from the rear in the direction indicated by the arrow*1.

(2) Bottom cover (11) removal

Remove the four screws (S1) (S4) and remove the rear protector (15). Then, remove the bottom cover (11) from the rear as indicated by the arrow*2.

(3) Right side cover (12) (Left side cover (13)) removal

Open the cover of the handle (9) in the direction indicated by the arrow*3 and remove the two screws (S3). Then, remove the side cover.

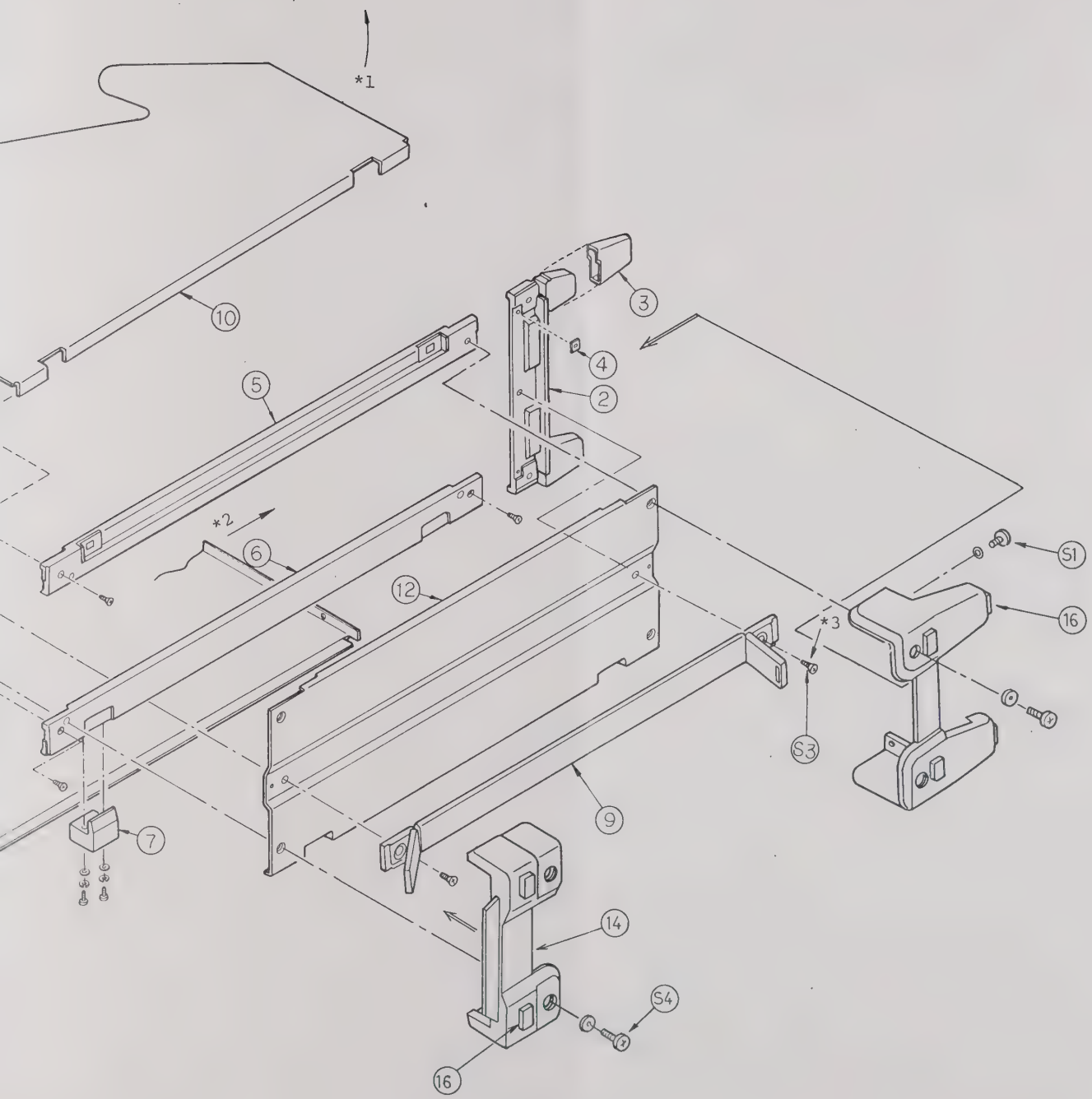
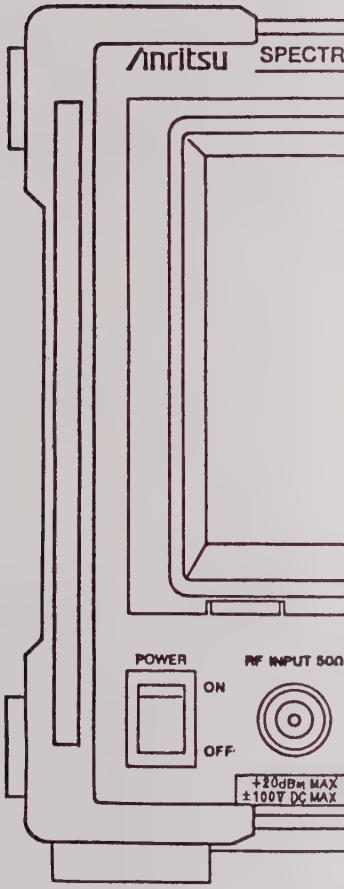


Fig. 2-1 Cabinet Assembly


Anritsu
SPECTR
POWER
ON
OFF
RF INPUT 50Ω
+20dBm MAX
±100V DC MAX

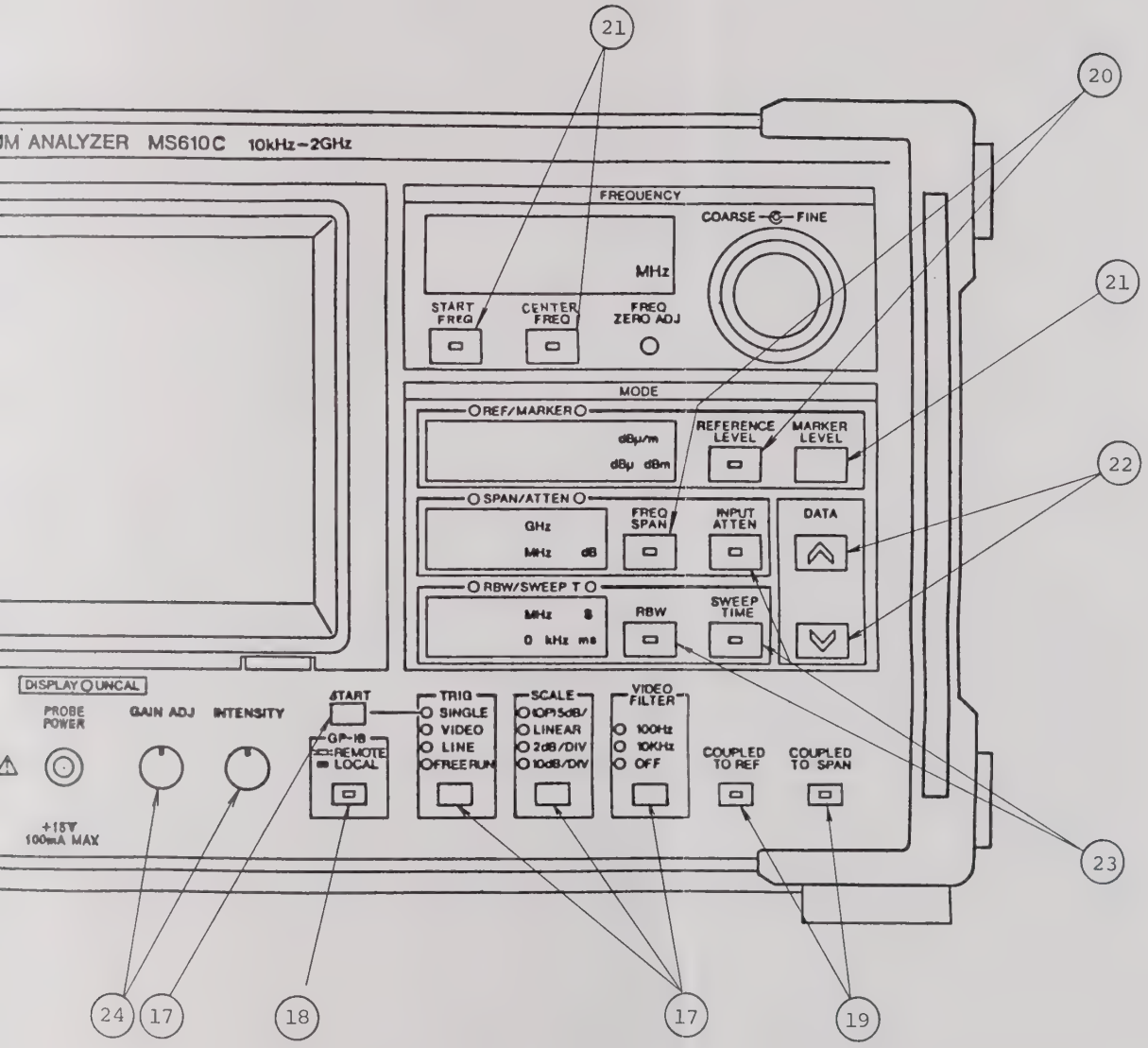
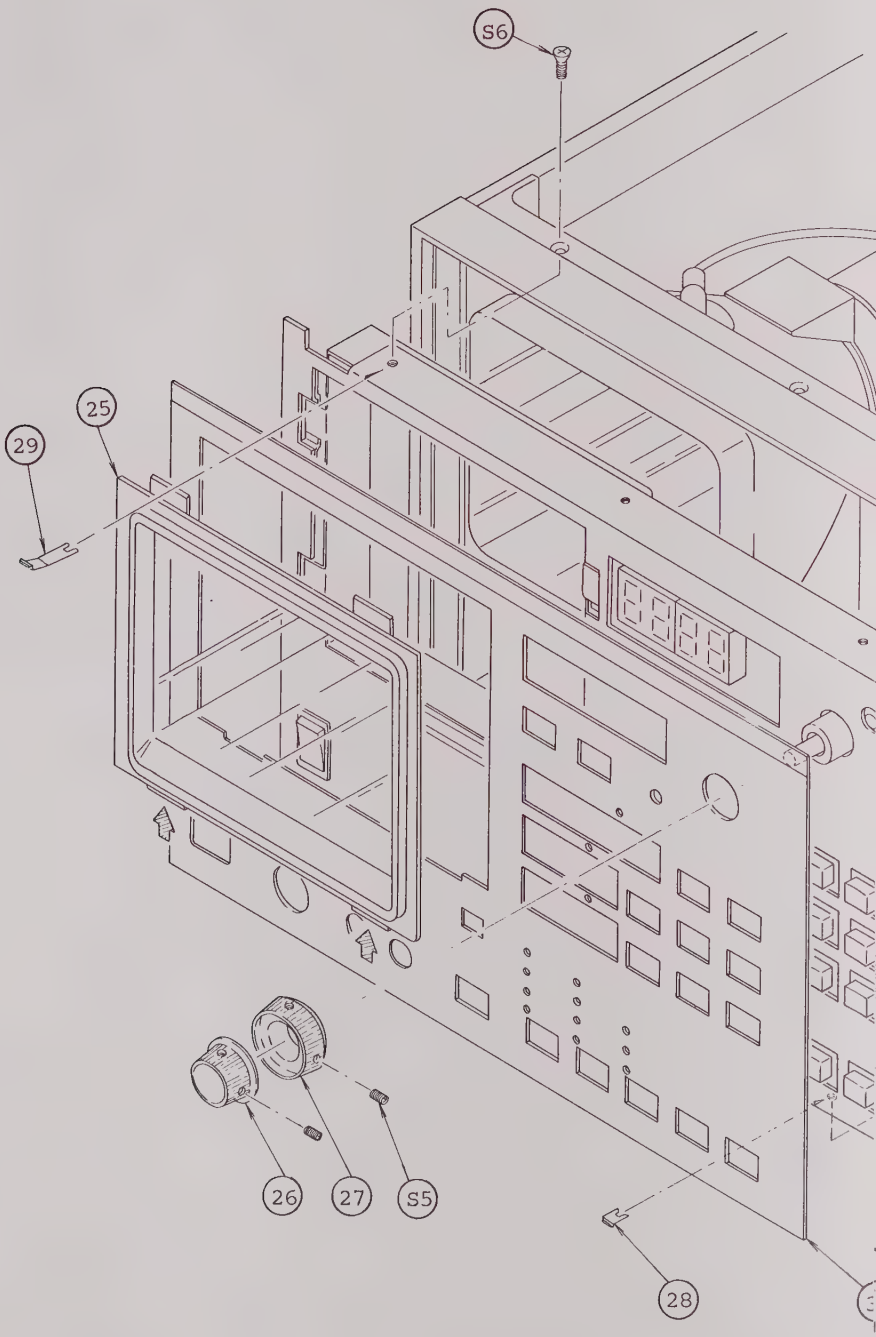
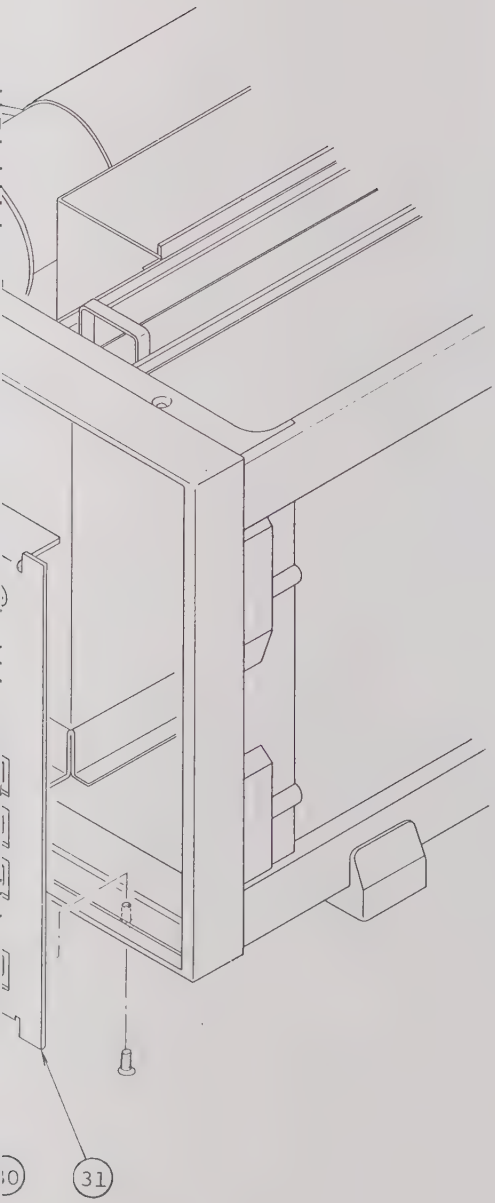


Fig. 2-2 Front Panel Assembly


S6
25
29
26
27
S5
28



Front Panel Assembly

(1) Lift the lower part of the CRT cover (25) in the direction indicated by the arrows and remove it.

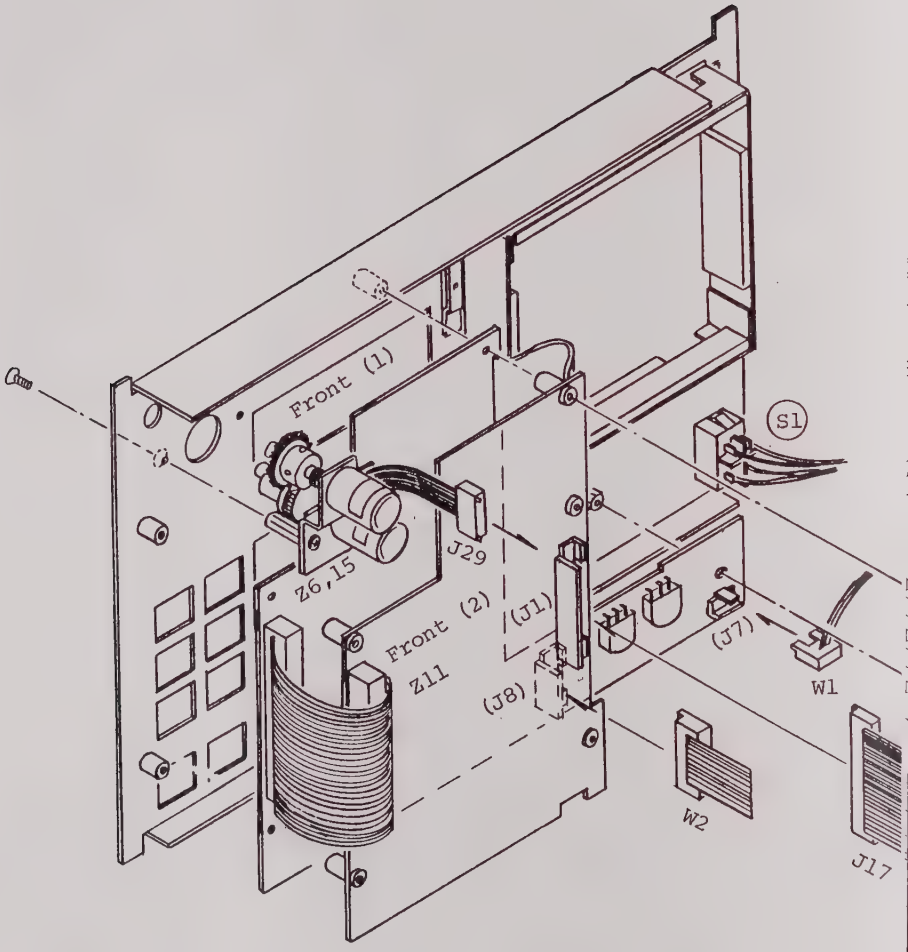
(2) Loosen both set screws (S5) for knobs (26) and (27), and then remove both knobs.

(3) Remove the six screws (S6). Then pull and remove the six panel clamps (28) and (29). Remove the front panel (30).

(4) Disconnect the connectors and wires connected to the front panel. (J29, J17, W1, W2 (Fig. 2-4), J16 (Fig. 2-10), Power switch cable (Fig. 2-5))

(5) Remove the sub panel (31).

Fig. 2-3 Front Panel Assembly (continued)


Front (1)
S1
J29
Z6,15
Front (2)
(J1)
Z11
(J8)
(J7)
W1
W2
J17

Front Panel Assembly

(1) Remove the six screws (S9) and then remove the front unit Z11.

(2) Remove the two screws (S10) and then remove the frequency volumes Z6 and Z15.

(3) Remove the power switch (S1).

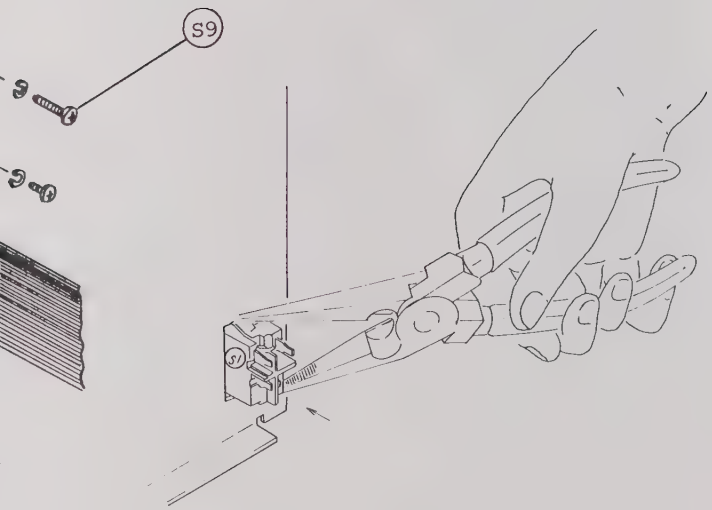


Fig. 2-4 Front Panel Assembly (continued)

CRT DRIVE UNIT Assembly

(1) Remove the left side cover (13) as in Fig. 2-1.

(2) Remove the four screws (S12) and remove the shield cover (34).

(3) Disconnect the five connectors J9, J22, J11, J19, J21 and CRT anode (Fig. 2-6).

(4) Remove the four screws (S13) and the two pillars (35). Then, remove the CRT DRIVE unit Z12.

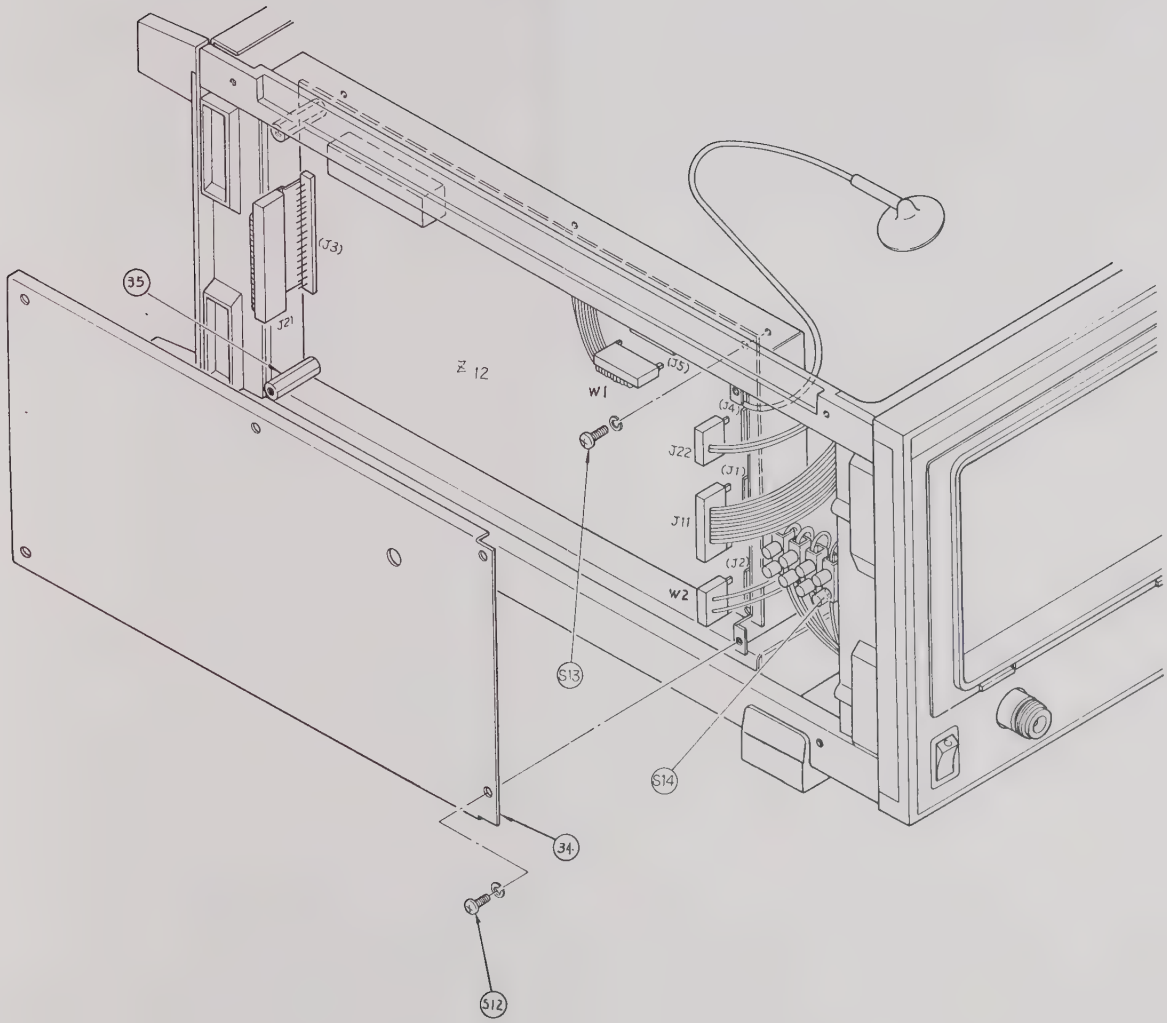
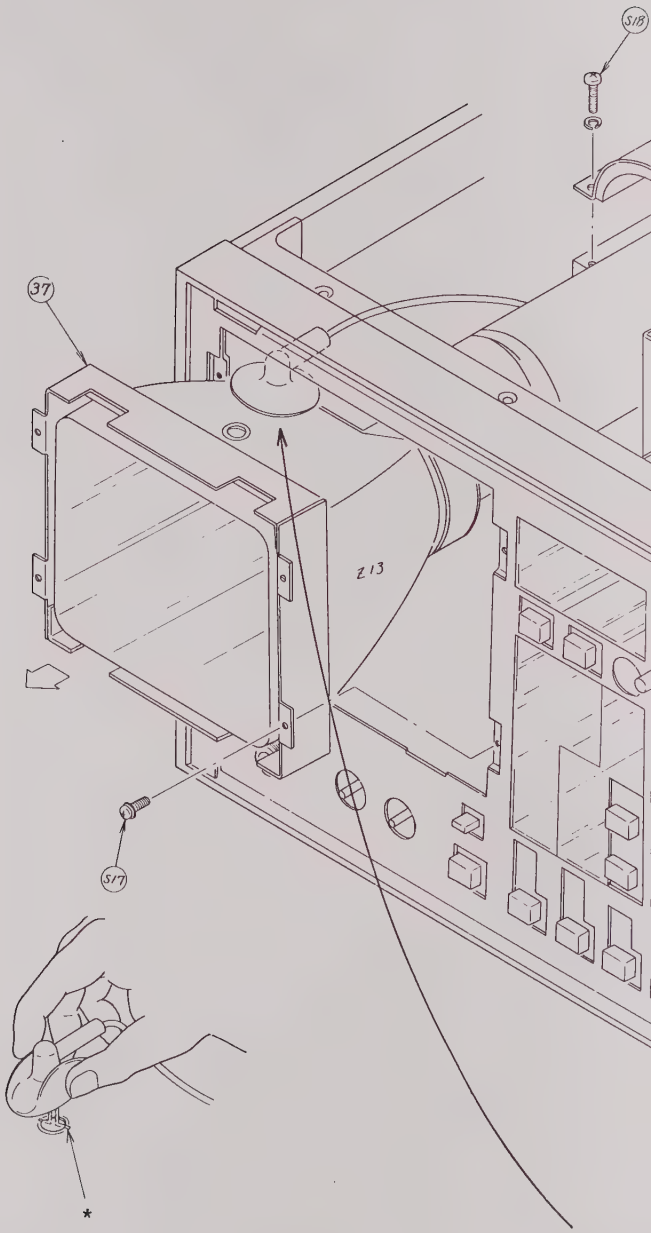


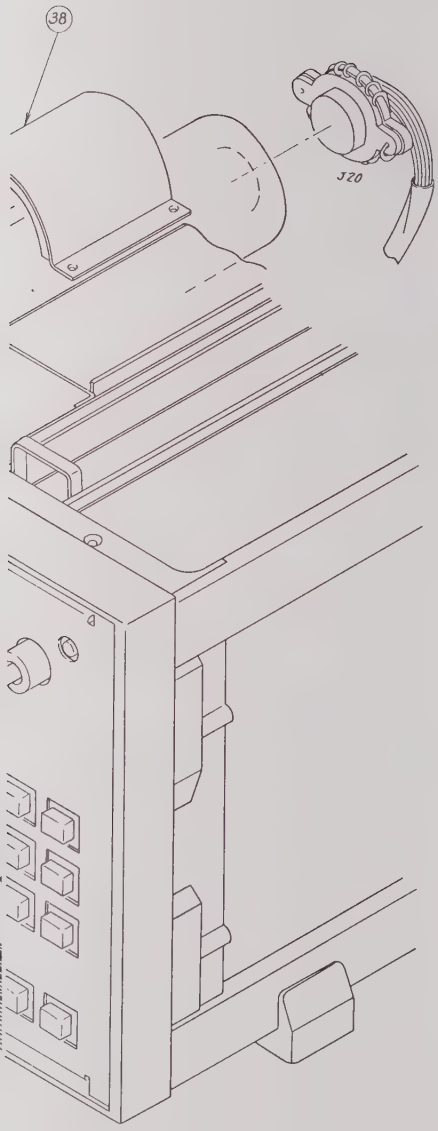
Fig. 2-5 CRT DRIVE UNIT Assembly

2-13/2-14 (blank)



CAUTION

Before
the hig
or simi



CRT DISPLAY UNIT Z13 Assembly

(1) Remove the front panel (30) as in Fig. 2-3.

(2) Remove the CRT anode cap (see CAUTION).

(3) Remove the four screws (S17) and remove the CRT frame (37).

(4) Remove the four screws (S18) and remove the CRT clamp (38).

(5) Disconnect the connector J22 connected to the CRT drive as in Fig. 2-5. Then, pull out the CRT and disconnect the CRT socket J20.

emoving the anode cap, discharge
voltage line * with a screwdriver
ar item.

Fig. 2-6 CRT DISPLAY UNIT Z13 Assembly

GP-IB UNIT Assembly

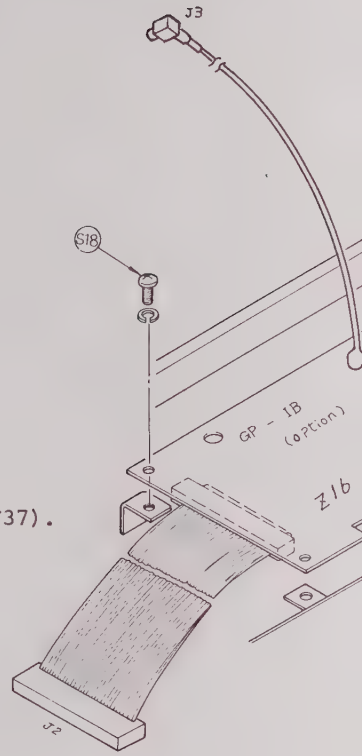
(1) Remove the four screws (S18) and then remove the GP-IB unit.

(2) Remove connector J2.

XYZ OUTPUT UNIT Z17 Assembly

(1) Remove the two screws (S12) and then remove the unit Z17.

(2) Disconnect the two connectors (J17 and J37).



CPU and SCAN UNIT Z9, Z10 Assembly

(1) Disconnect the seven connectors (J2, J7, J11 J12, J13, J15, J17, J18 and J36).

(2) Lift out the units Z9 and Z10 using the handles.

POWER SUPPLY UNIT Z7 Assembly

(1) Disconnect the three connectors (J4, J9 and J20).

(2) Lift out the unit Z7.

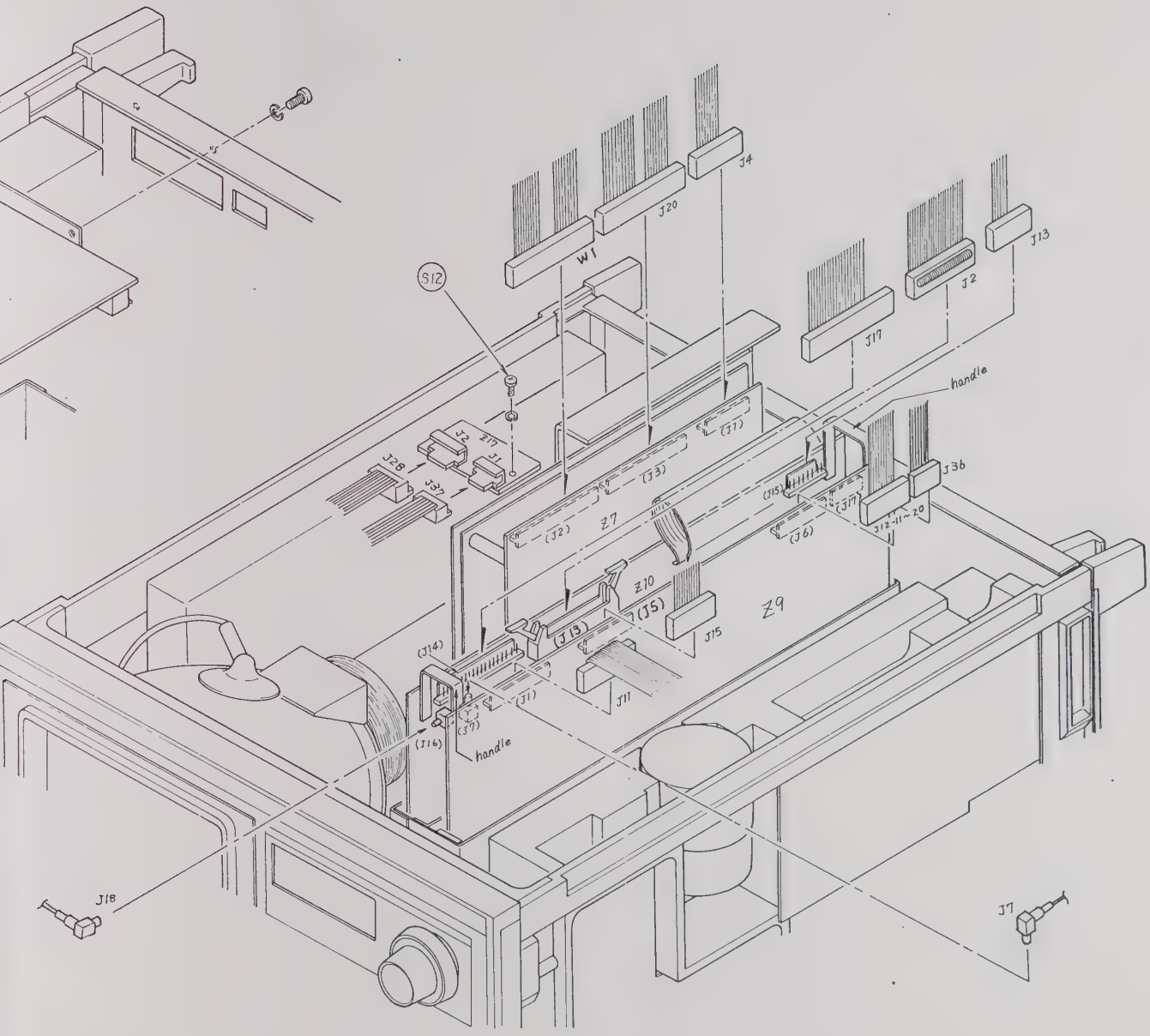
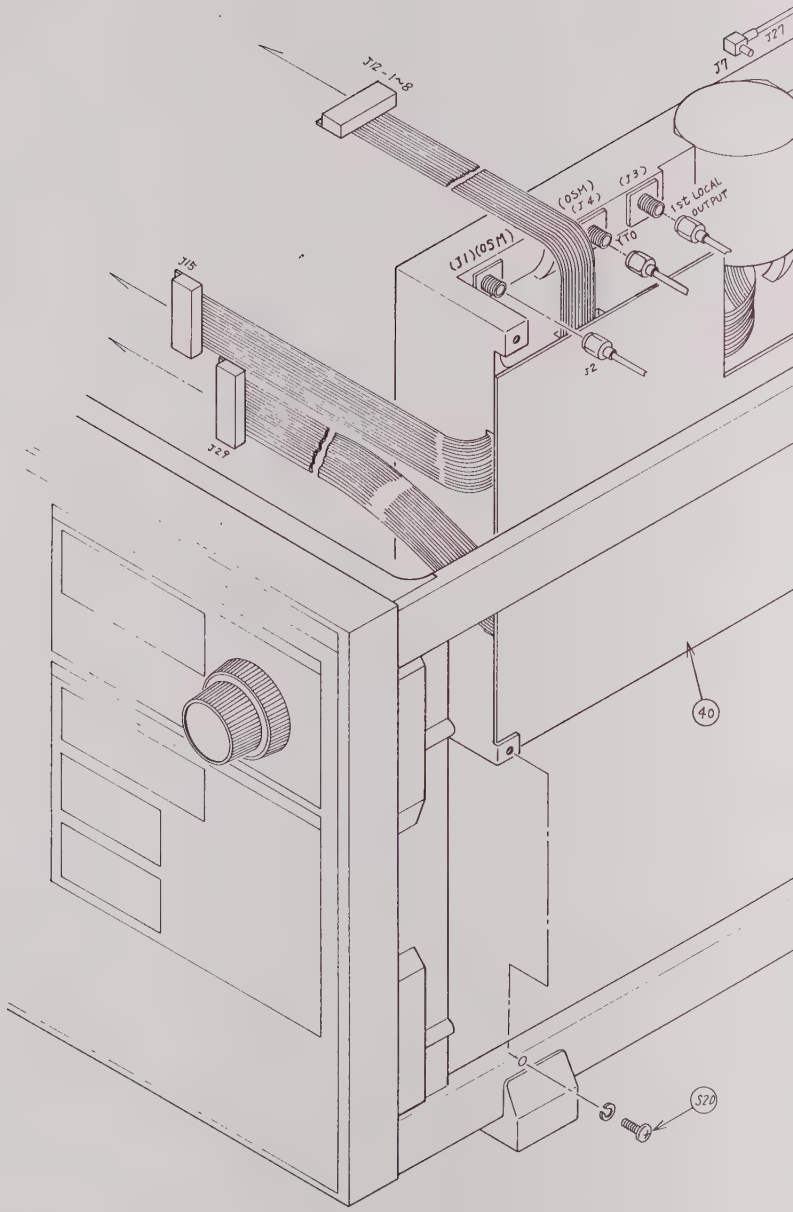
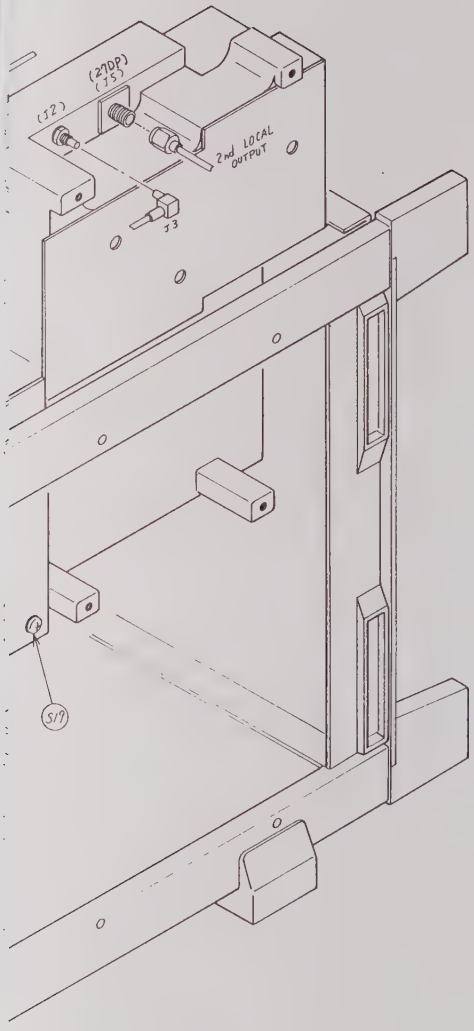


Fig. 2-7 CPU and SCAN UNIT Z9, Z10 Assembly


J12-J48
J7
J27
(OSM)
(J4)
(J3)
1ST LOCAL
OUTPUT
J10
(J1)(OSM)
J15
J2
J29
40
520

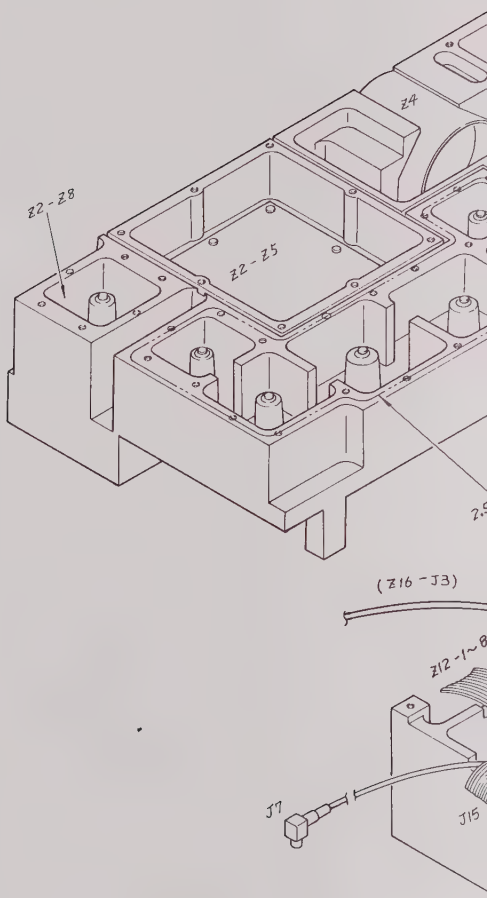


RF UNIT Assembly

(1) Remove the screws (S19) and open the shield cover (40). Then, disconnect the three connectors (J12, J15 and J29).

(2) Disconnect the coaxial connectors (J2, J3, J27, YTO, 1st and 2nd LOCAL OUTPUT), and remove the six screws (S20). Then, remove the RF Block.

Fig. 2-8 RF UNIT Assembly


Z4
Z2 - Z8
Z2 - Z5
(Z16 - J3)
Z12 -1~8
J7
J15

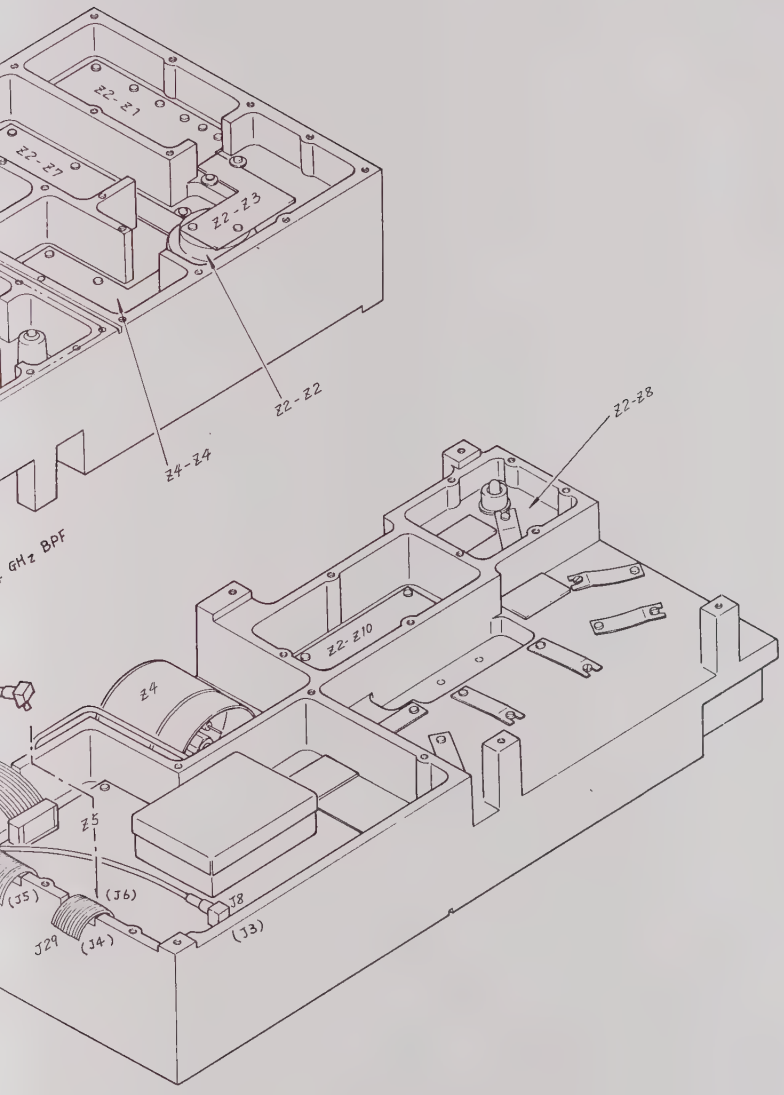
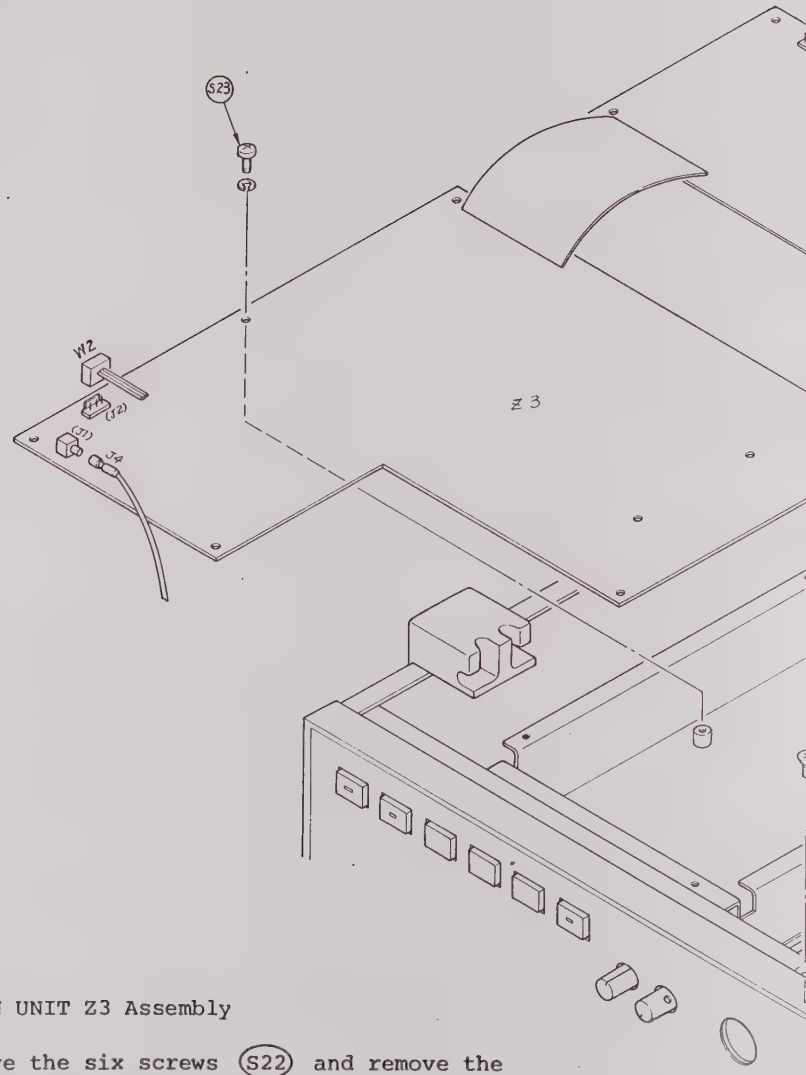


Fig. 2-9 RF UNIT Assembly (continued)



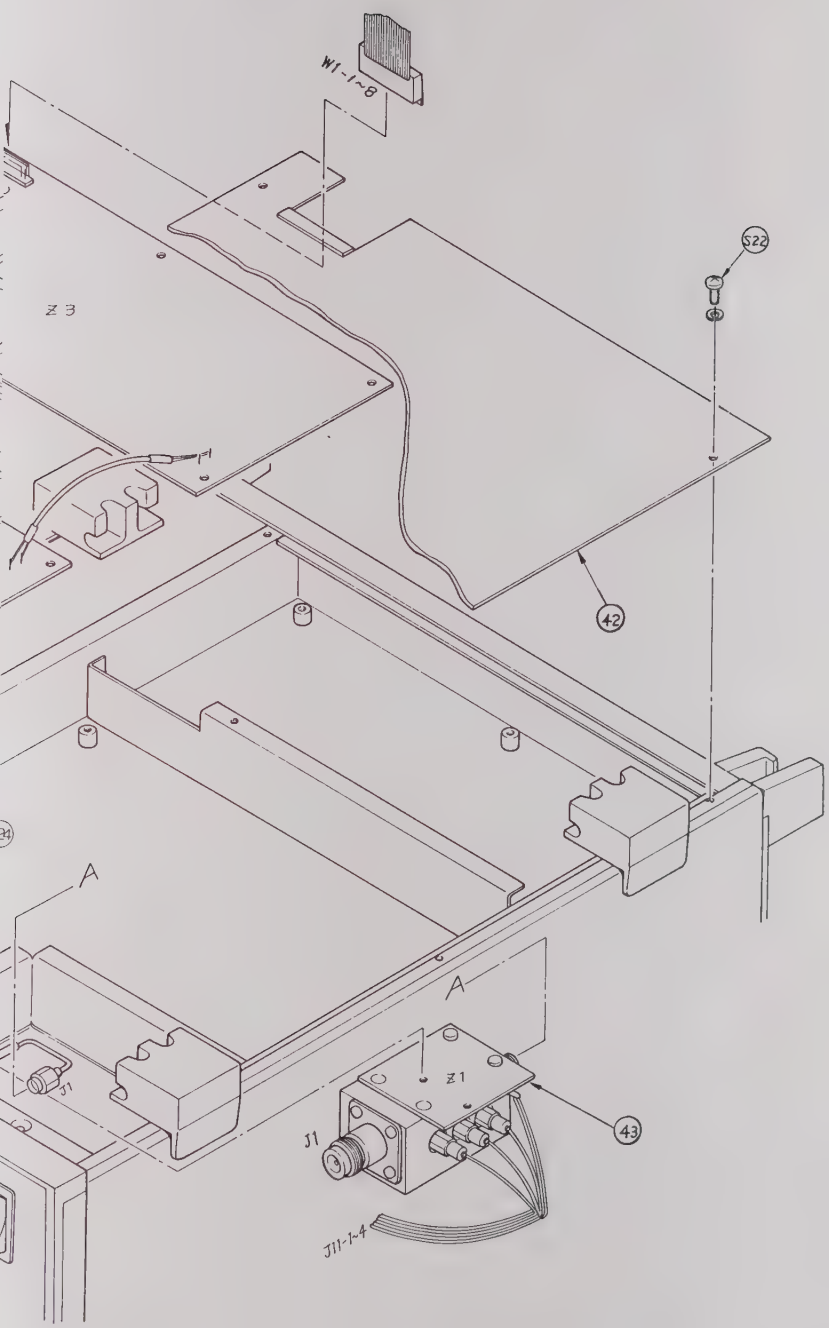
IF SECTION UNIT Z3 Assembly

(1) Remove the six screws (S22) and remove the shield panel (42).

(2) Disconnect the two connectors (J9, J16) and the coaxial connector J4.

(3) Remove the twelve screws (S23).

(4) Remove the IF section unit Z3.



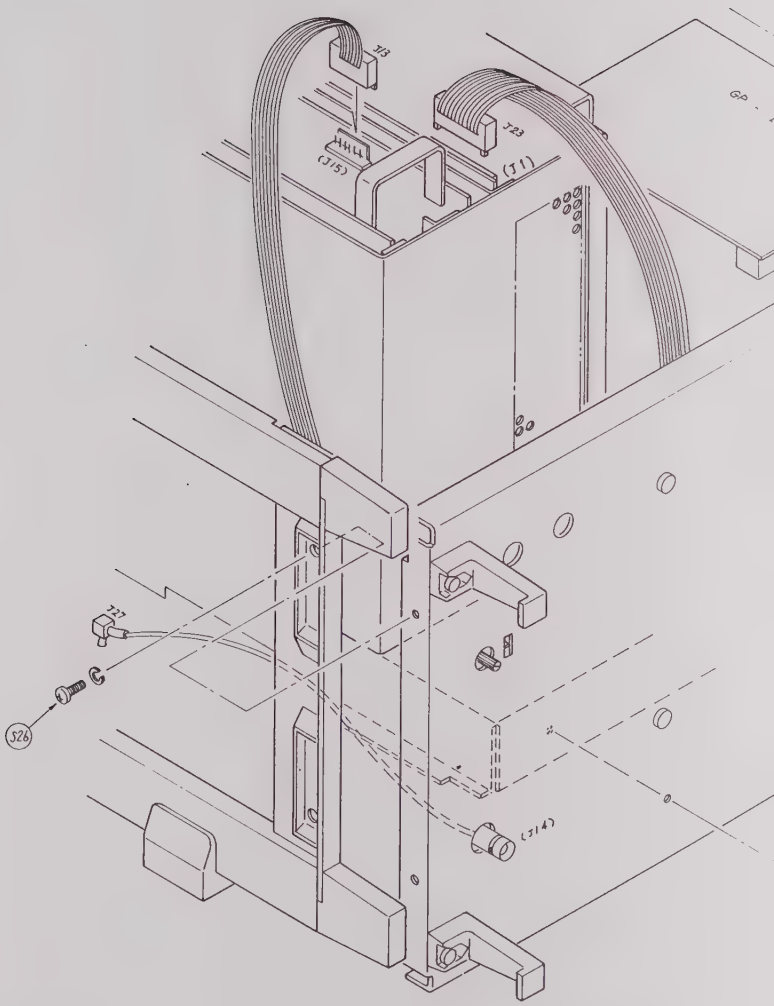
P-ATT UNIT Z1 Assembly

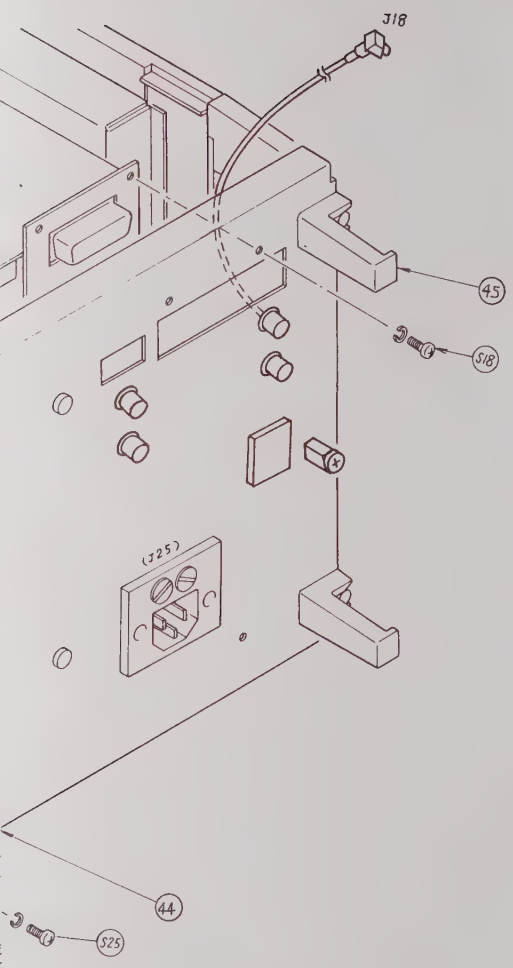
(1) Remove the two screws (S24).

(2) Disconnect connector J11 and the coaxial connector J1.

(3) Remove the P-ATT unit Z1.

Fig. 2-10 IF SECTION UNIT Z3 Assembly


J13
J23
(J15)
(J1)
J27
526
(J14)



Rear Panel Assembly

(1) Remove the two screws (S18) and the GP-IB option.

(2) Remove the two screws (S25) and the four screws (S26).

(3) Remove the rear panel (44) and disconnect connectors J13, J23 and J27.

(4) Disconnect the inside terminal of ac power inlet J25.

(5) Remove the inside nut of J24 and the earth-tag.

Fig. 2-11 Rear Panel Assembly

2.2 Ac Line Power Supply Rating Changes

The MS610C/K has a power transformer with several taps so that nominal ac line voltages specified from 100 to 250 Vac can be used.

When changing to a different nominal ac line voltage, change the wiring on the appropriate primary taps of the power transformer according to Fig. 2-12.

(Refer to the circuit diagram 24 in Section 4.)

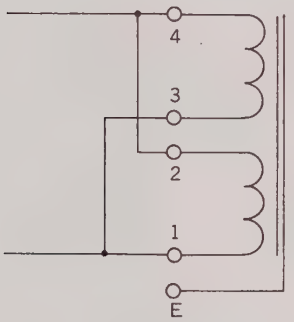
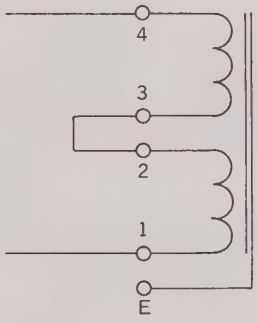
Nominal 100 V System	Nominal 200 V System
	
Nominal ac line voltages: 100 to 127 V	Nominal ac line voltages: 200 to 250 V

Fig. 2-12 Ac Line Power Supply Rating Change

SECTION 3

CIRCUIT DESCRIPTION

3.1 Introduction

The MS610C/K is a superheterodyne type scanning spectrum analyzer.

The block diagram is shown in Fig. 3-1.

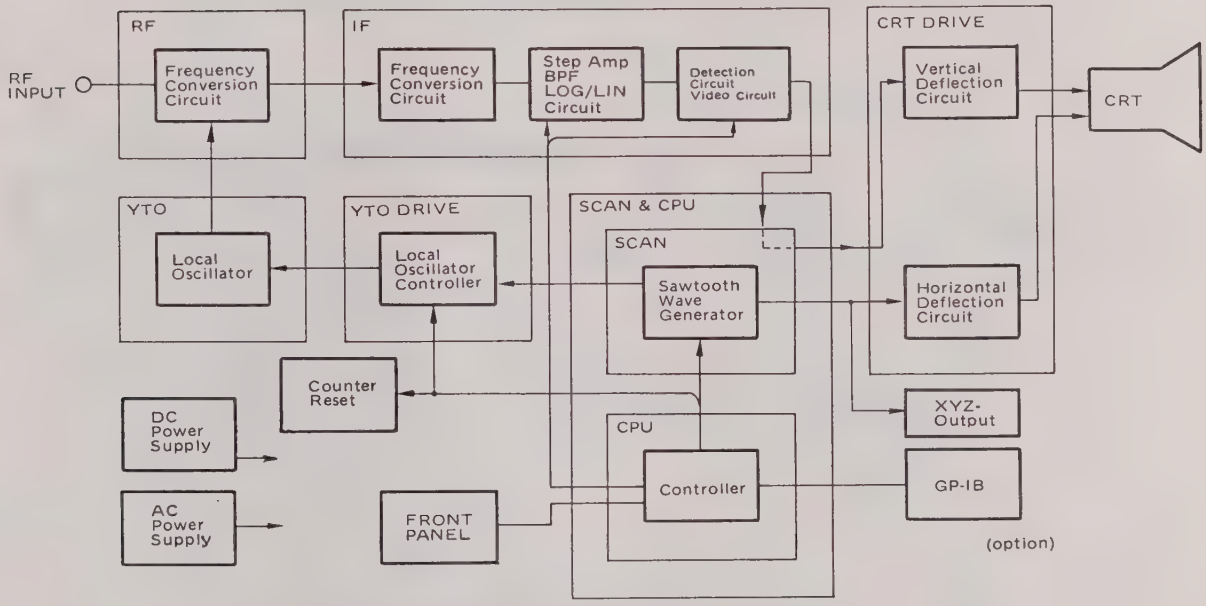


Fig. 3-1 MS610C/K Block Diagram

The RF input signal is converted to an IF signal by the frequency conversion circuit mixer in RF and IF Sections. This IF signal is detected and is applied to the CRT vertical deflection plate. The sweep signal is generated by a sawtooth wave generator and is applied to the CRT horizontal deflection plate. This sweep signal simultaneously sweeps the local oscillator, and frequency sweep corresponding to the CRT horizontal axis is performed. A controller controls each section using a microcomputer.

3.2 RF Section

After the RF input signal passes through the P-ATT (Programmable Attenuator), 0 to 2 GHz LPF and 6 dB PAD, it is sent to the Frequency Conversion Circuit. The input signal is converted to a 21.4 MHz IF signal after double frequency conversion as shown in Fig. 3-2. After the input signal is beat up to 2.5214 GHz to prevent image response, it is converted to 21.4 MHz.

The CAL signal is generated by the 50 MHz OSC.

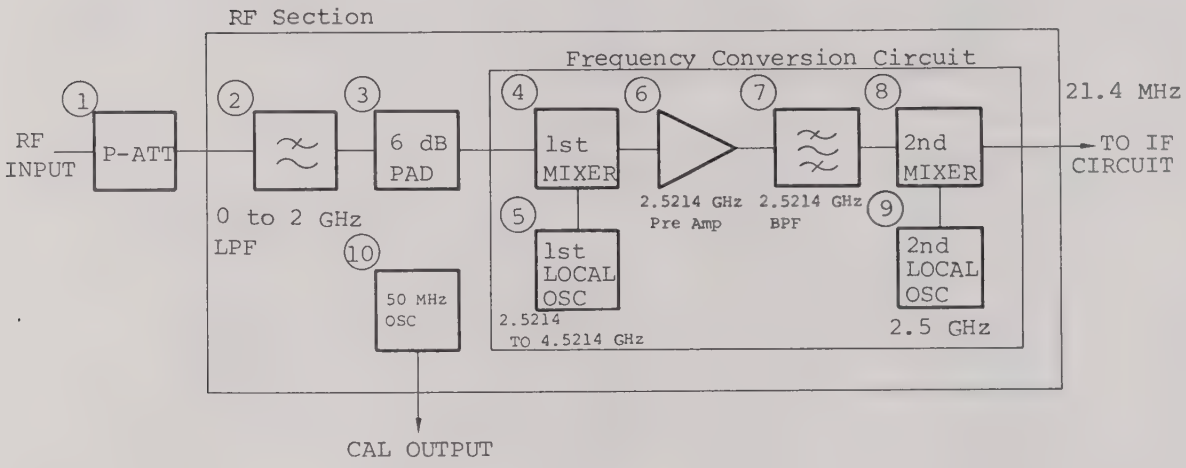


Fig. 3-2 RF Section Block Diagram

The P-ATT is exposed in a front corner when the bottom cover is removed.

A diecast case, which includes the RF section, is exposed on the right side when the top and right side covers are removed.

The layout of the RF Section in the diecast case is shown in Fig. 3-3. The numbers in Fig. 3-3 correspond to the numbers in Fig. 3-2.

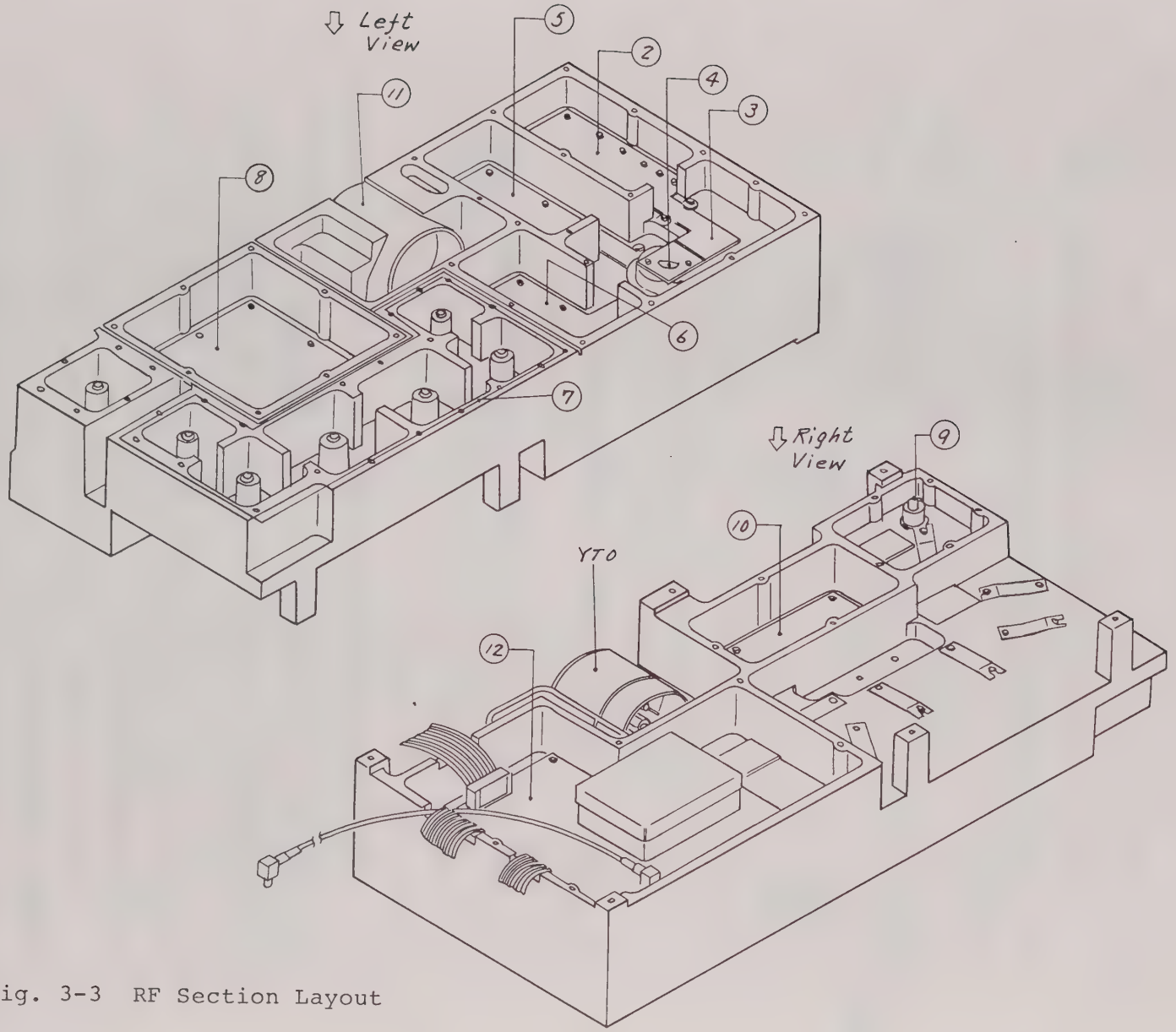


Fig. 3-3 RF Section Layout

3.3 IF Section

The IF SECTION block diagram is shown in Fig. 3-4.

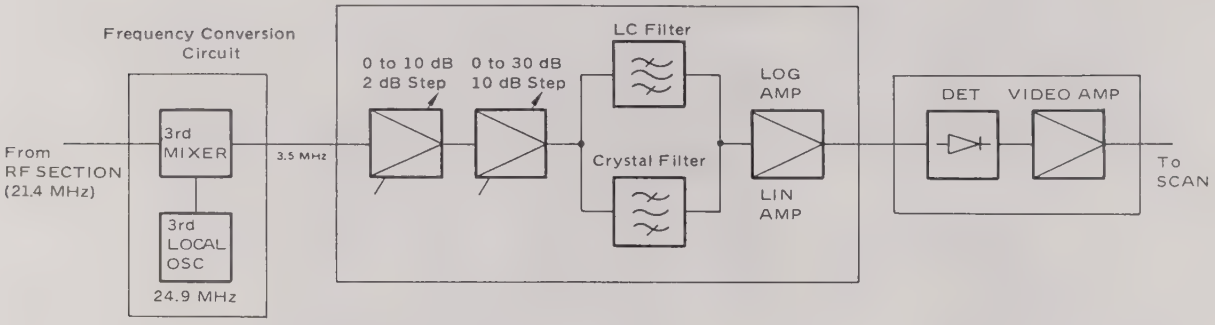


Fig. 3-4 IF Section Block Diagram

The 21.4 MHz IF signal is converted to a 3.5 MHz IF signal by a 3rd Mixer.

After the 3.5 MHz IF signal passes through a 2 dB step, 0 to 10 dB variable gain amplifier, and a 10 dB step, 0 to 30 dB variable gain amplifier, it is sent through the LC and crystal filters.

The crystal filter determines the 1 to 3 kHz bandwidth and the LC filter determines the 10 kHz to 1 MHz bandwidth. The signals from these filters are amplified by the LOG and LINEAR amplifiers which determine the vertical axis scale.

The 3.5 MHz signal from the LOG or LINEAR amplifier is detected by the detection circuit and amplified to 0 to 4 V by the video circuit.

The IF PC board is exposed when the bottom and next covers are removed.

3.4 Scan & CPU Sections

(1) Scan section

The Scan section block diagram is shown in Fig. 3-5.

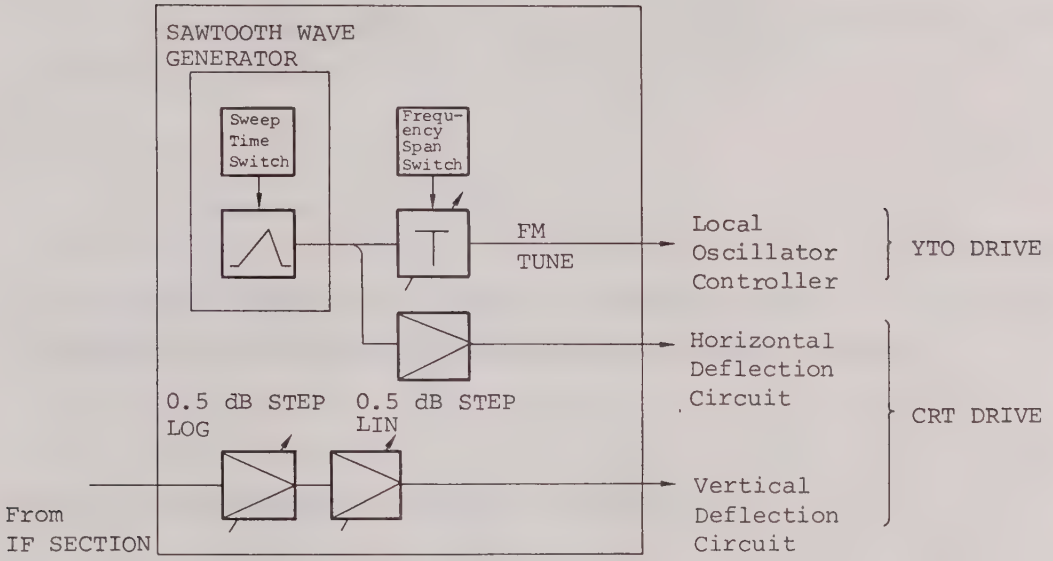


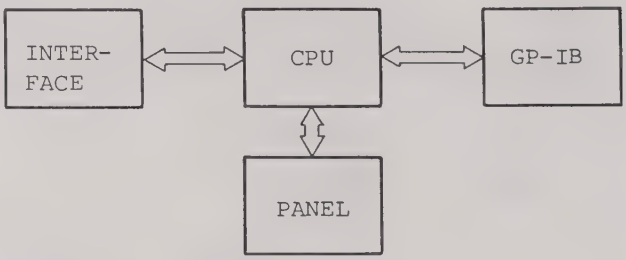
Fig. 3-5 Scan Section Block Diagram

The sweep time is determined by the SWEEP TIME switch; the sawtooth wave signal sweeps the 1st local oscillator through the FREQ SPAN switch that controls the FREQ SPAN. The SWEEP TIME switch and FREQ SPAN switch are controlled by the controller. The sawtooth wave signal also sweeps the CRT horizontal axis.

After the detected signal from the IF section passes through a 0.5 dB step Log amplifier and a 0.5 dB step Linear amplifier, it is sent to the vertical deflection circuit in the CRT DRIVE section.

(2) CPU section

The MS610C/K uses a CPU controller. Each circuit is controlled via an interface circuit for panel key inputs. GP-IB control is also performed.



The scan and CPU PC boards in the middle of the MS610C/K are exposed when the top cover is removed.

3.5 YTO DRIVE and YTO (Local Oscillator)

The YTO DRIVE section consists of an FM coil driver and a TUNE coil driver as shown in Fig. 3-6.

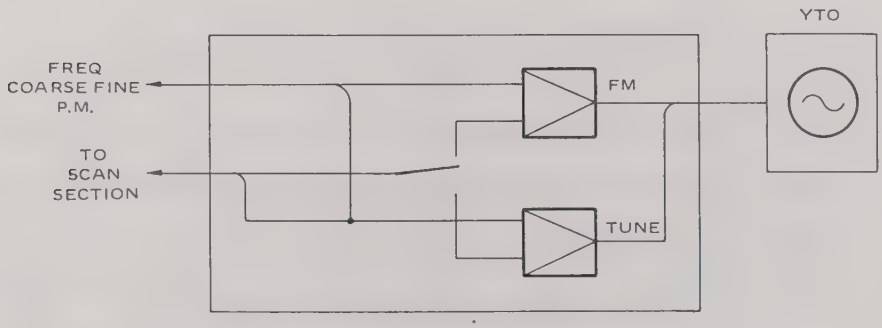


Fig. 3-6 YTO DRIVE Block Diagram

The YTO (1st Local Oscillator) contains tuning and FM coils that are driven by current.

A YTO tuned coil is used in the 5 MHz to 2 GHz wide-band sweep and a YTO FM coil is used in the 100 kHz to 2 MHz narrow-band sweep.

The YTO and YTO driver are mounted in the diecast case as shown in Fig. 3-3.

3.6 CRT DRIVE

The CRT DRIVE section receives X-, Y-, Z-axis (Blanking), marker pulse signals from the Scan section, and intensity-controlling signal. These signals are converted to the high voltages which drive the CRT.

The PC board can be seen by removing left and protection covers.

Be careful of the high voltage.

3.7 Power Supply and Front Panel

(1) Power supply

The Power Supply section produces the dc power supply (±15 V, ±12 V, +5 V).

The angle (hatched) with the power supply PC board is exposed in the middle when the top cover is removed. (See Fig. 5-2.)

(2) Front panel

The front panel section drives all LEDs under control of the CPU and sends the status of front panel keys to the CPU.

The front panel PC boards are installed in front behind the displays and keys.

SECTION 4

CIRCUIT DIAGRAMS

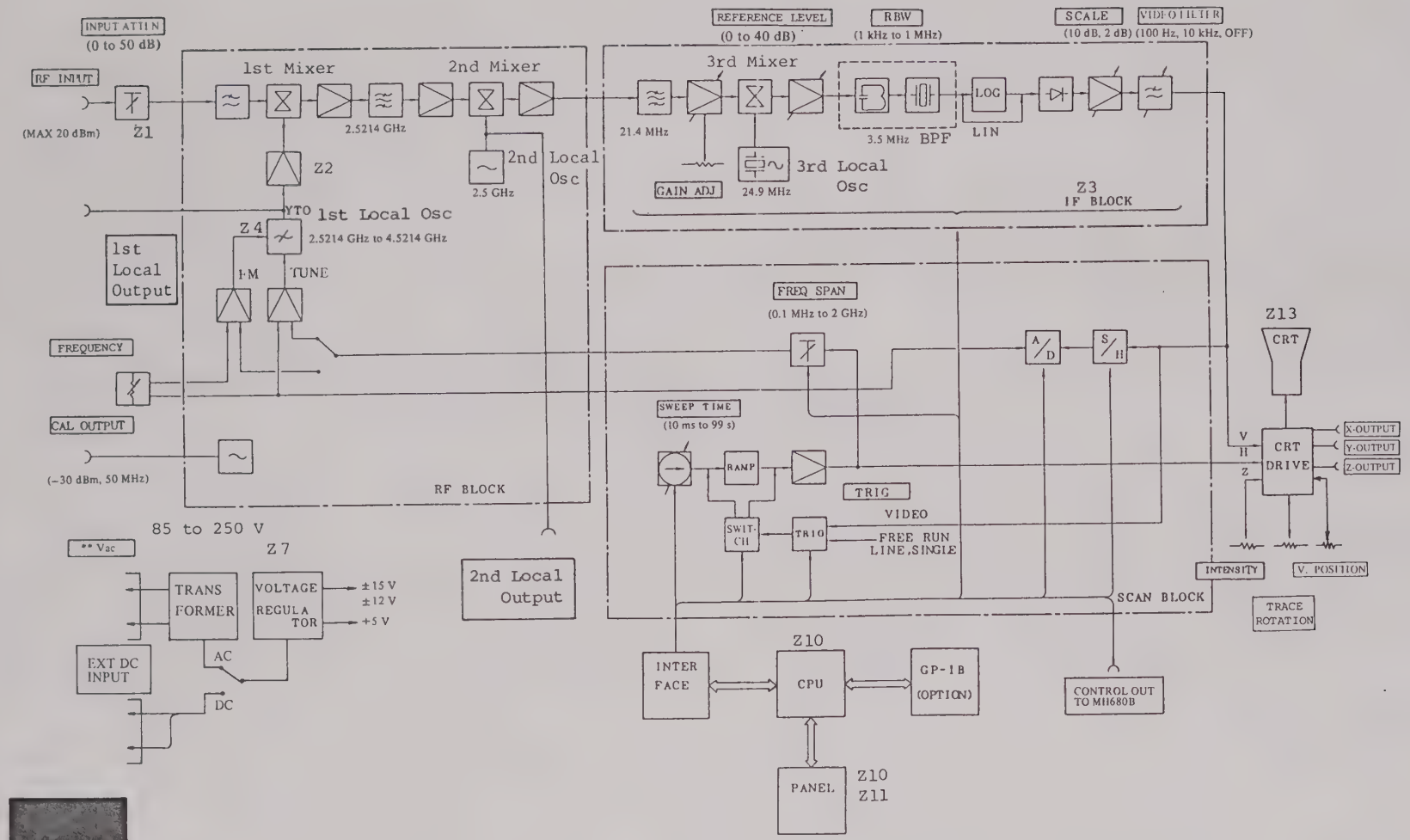
Table 4-1 lists the names of all PC boards. It also gives the circuit diagram numbers.

Table 4-1 Circuit Diagrams and PC Boards

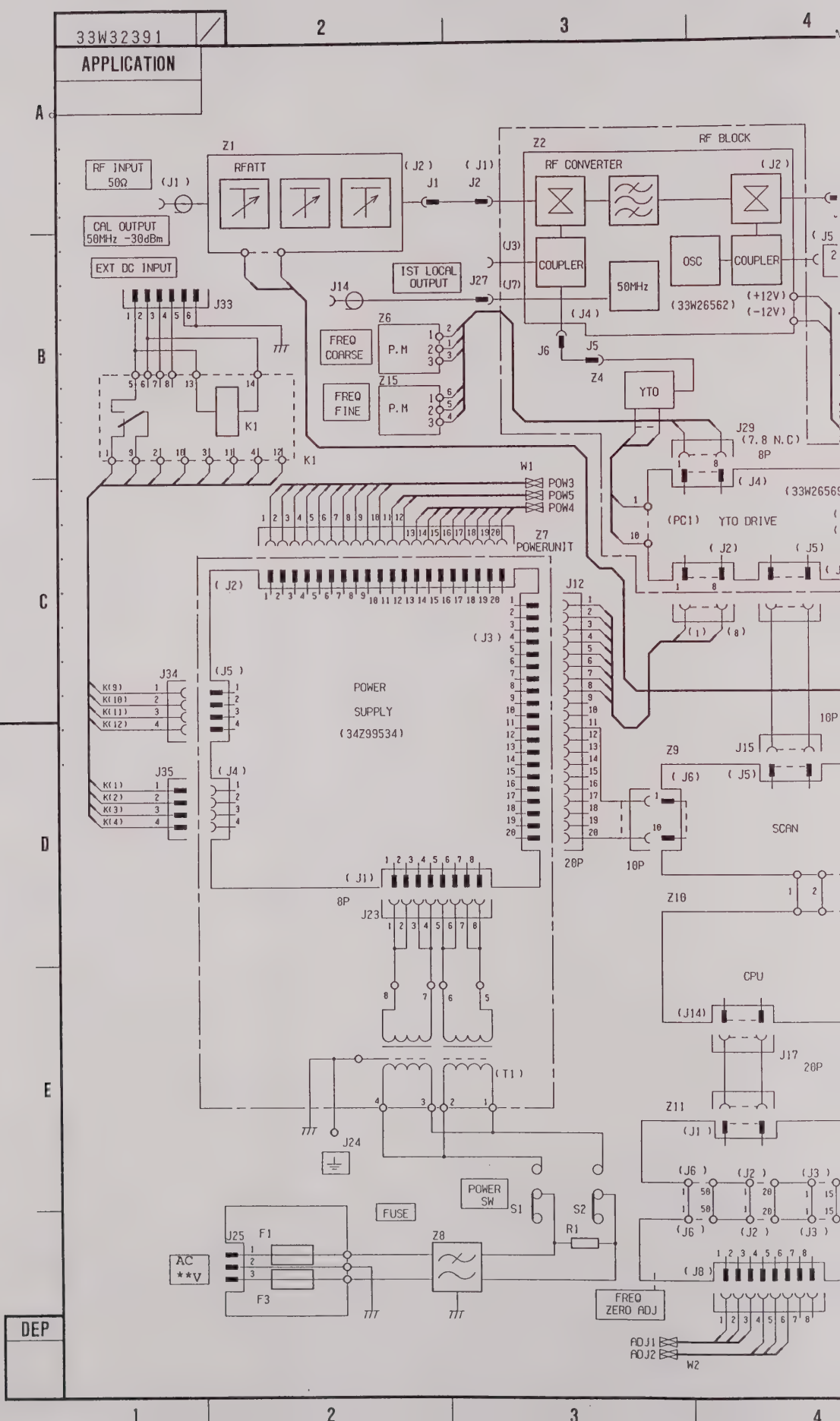
Circuit Diagram No.	Z No.	Name	PC Board No.
1		MS610C/K Block Diagram	———
2		MS610C/K Circuit Diagram	———
3		FRONT PANEL (1) (2) Block Diagram	———
4	Z11	FRONT PANEL (1) Circuit Diagram	332U32387
5	Z11	FRONT PANEL (2) Circuit Diagram	332U32389
6		IF Block Diagram	———
7	Z3	IF Circuit Diagram	322U10018 (or 322U9289)
8		SCAN (Scan & CPU) Block Diagram	———
9		CPU (Scan & CPU) Block Diagram	———
10	Z9 & Z10	SCAN & CPU Circuit Diagram	322U10323
11		CRT DRIVE Block Diagram	———
12	Z12	CRT DRIVE Circuit Diagram	332U25790

Table 4-1 (Continued)

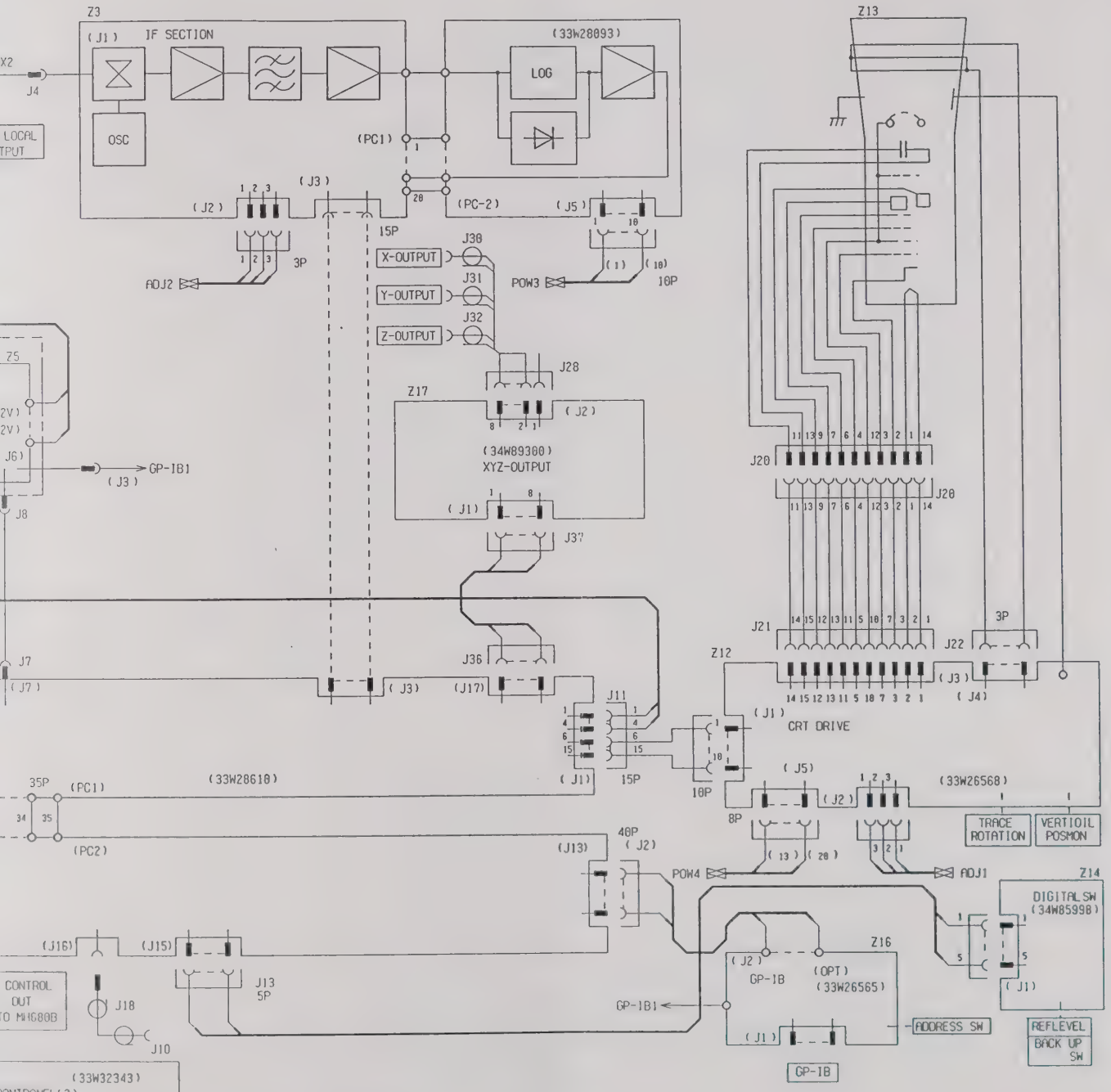
Circuit Diagram No.	Z No.	Name	PC Board No.
13		YTO DRIVE Block Diagram	———
14	Z5	YTO DRIVE Circuit Diagram	332U25796
15		RF CONVERTER Block Diagram	———
16	Z2	RF CONVERTER Circuit Diagram	———
17		2nd. CONVERTER Circuit Diagram	332U25775
18		50 MHz OSC Circuit Diagram	342U84163
19		2.5214 GHz PRE AMP Circuit Diagram	332U25772
20		2.5 to 4.5 GHz LO AMP Circuit Diagram	332U27955
21		6 dB PAD Circuit Diagram	342U84146
22	Z14	DIGITAL SW Circuit Diagram	332U32387
23		POWER SUPPLY Block Diagram	———
24	Z7	POWER SUPPLY Circuit Diagram	(No number)
25	Z17	XYZ OUTPUT Circuit Diagram	342U88434
26	Z16	GP-IB Circuit Diagram	332U25798



MS610C/K Block Diagram


33W32391
APPLICATION
DEP
RF INPUT 50Ω
(J1)
CAL OUTPUT 50MHz -30dBm
EXT DC INPUT
Z1
RFATT
(J2)
(J1)
J1
J2
Z2
RF BLOCK
RF CONVERTER
(J2)
(J3)
COUPLER
50MHz
OSC
COUPLER
(J5)
(J7)
(+12V)
(-12V)
(33W26562)
(J4)
IST LOCAL OUTPUT
J27
J14
J33
Z6
P.M
FREQ COARSE
Z15
P.M
FREQ FINE
K1
J6
J5
Z4
YTO
J29
(7.8 N.C)
8P
W1
POW3
POW5
POW4
Z7
POWERUNIT
(PC1)
YTO DRIVE
(J2)
(J5)
(J4)
(33W26569
POWER
SUPPLY
(34Z99534)
J34
J35
J12
20P
10P
Z9
(J6)
(J5)
SCAN
J15
10P
(J1)
8P
J23
Z10
CPU
(J14)
J17
20P
Z11
(T1)
J24
POWER SW
S1
S2
R1
FUSE
J25
F1
F3
Z8
AC **V
(J6)
(J2)
(J3)
(J8)
FREQ ZERO ADJ
ADJ1
ADJ2
W2

REVISIONS
-



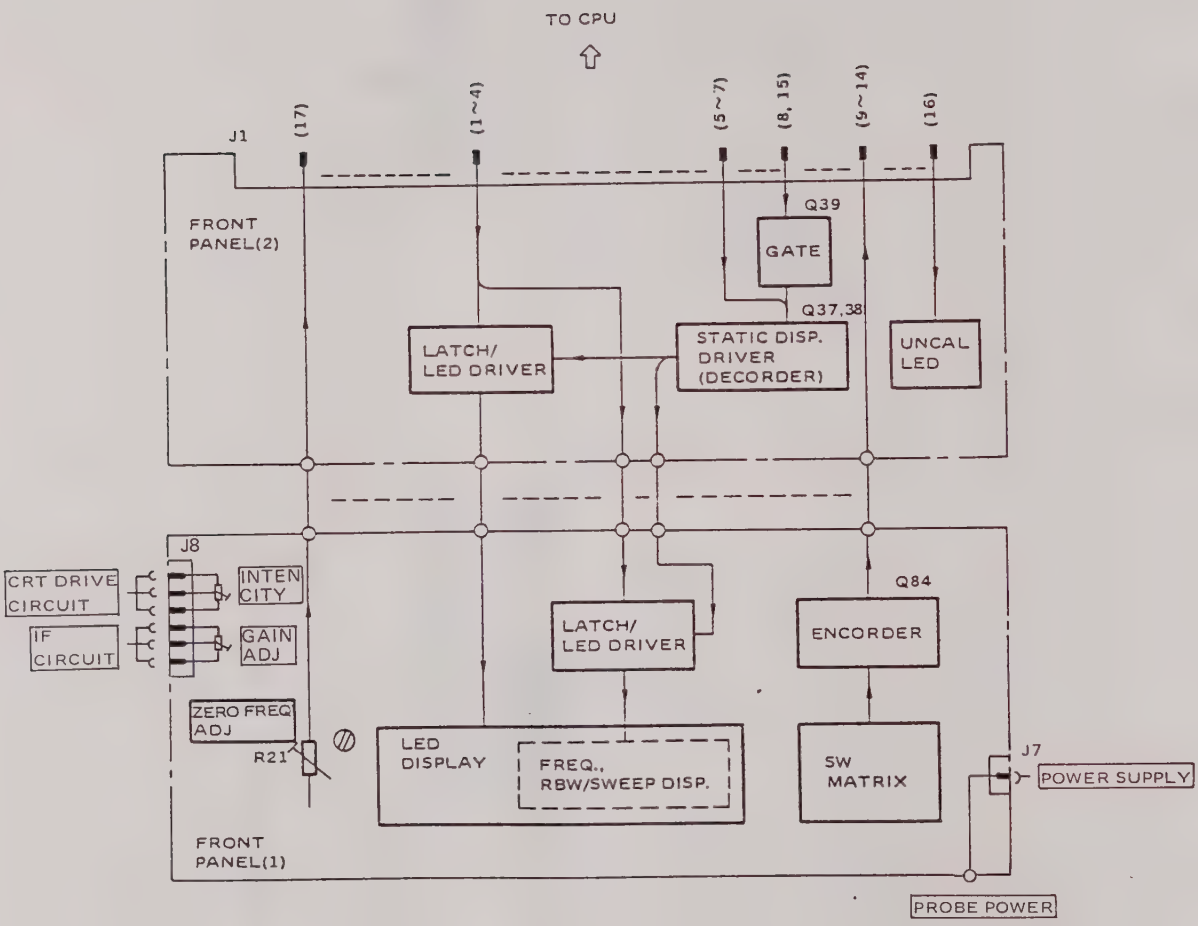
QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH

CHECKED BY	DRAWN BY	SCALE
APPROVED BY H. Toda	DESIGNED BY Satou	:

2

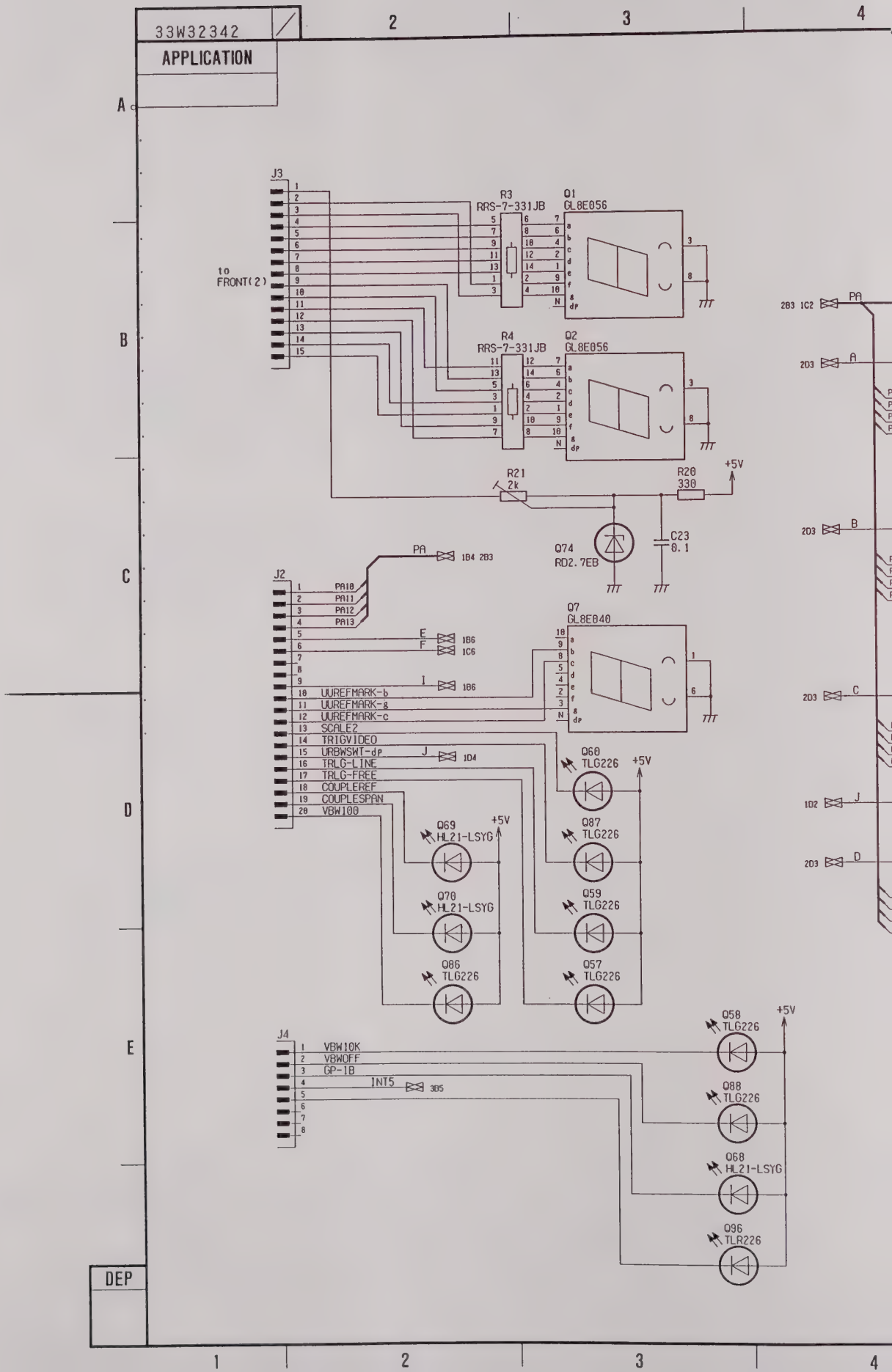
TITLE
MS610C/K SPECTRUM ANALYZER

DRAWING No.
33W32391 1/1

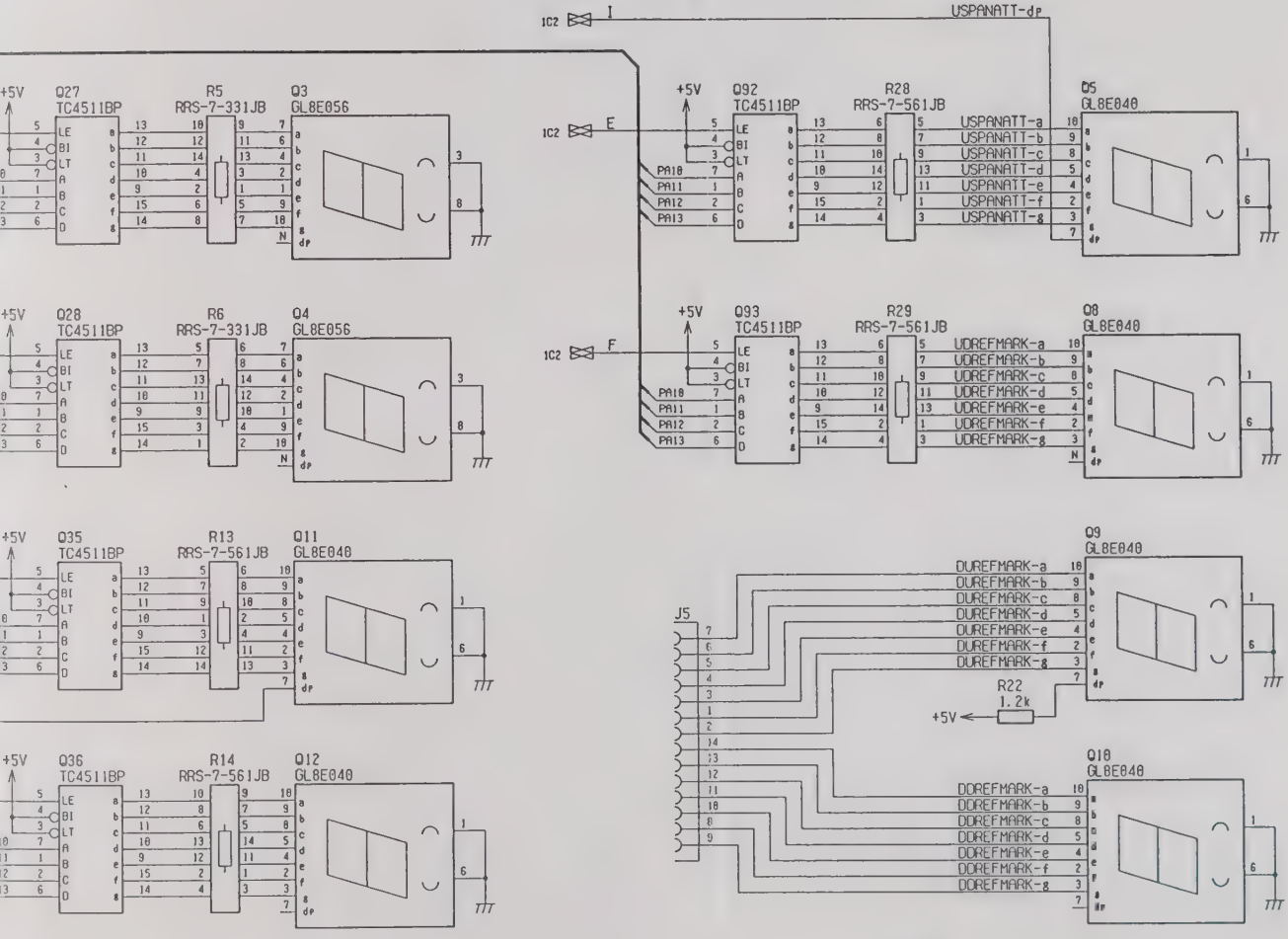


FRONT PANEL
Block Diagram

3


33W32342
APPLICATION
DEP
J3
to FRONT(2)
R3 RRS-7-331JB
R4 RRS-7-331JB
Q1 GL8E056
Q2 GL8E056
R21 2k
R20 330
+5V
Q74 RD2.7EB
C23 0.1
PA
1B4 2B3
J2
PA10
PA11
PA12
PA13
E
F
1B6
1C6
J
1B6
UVREFMARK-b
UVREFMARK-g
UVREFMARK-c
SCALE2
TRIGVIDEO
URBWSWT-dP
J
1D4
TRLG-LINE
TRLG-FREE
COUPLEREF
COUPLESPAN
VBW100
Q7 GL8E040
Q60 TLG226
Q69 HL21-LSYG
Q70 HL21-LSYG
Q86 TLG226
Q87 TLG226
Q59 TLG226
Q57 TLG226
J4
VBW10K
VBWOFF
GP-1B
INT5
3B5
Q58 TLG226
Q88 TLG226
Q68 HL21-LSYG
Q96 TLR226
2B3 1C2 PA
2D3 A
2D3 B
2D3 C
1D2 J
2D3 D

REVISIONS
-



TO PANEL2

QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH

CHECKED BY	DRAWN BY	SCALE	4
APPROVED BY H. Toda	DESIGNED BY Satou	:	

PARTS LIST 34W85992

TITLE

FRONT(1) Circuit Diagram

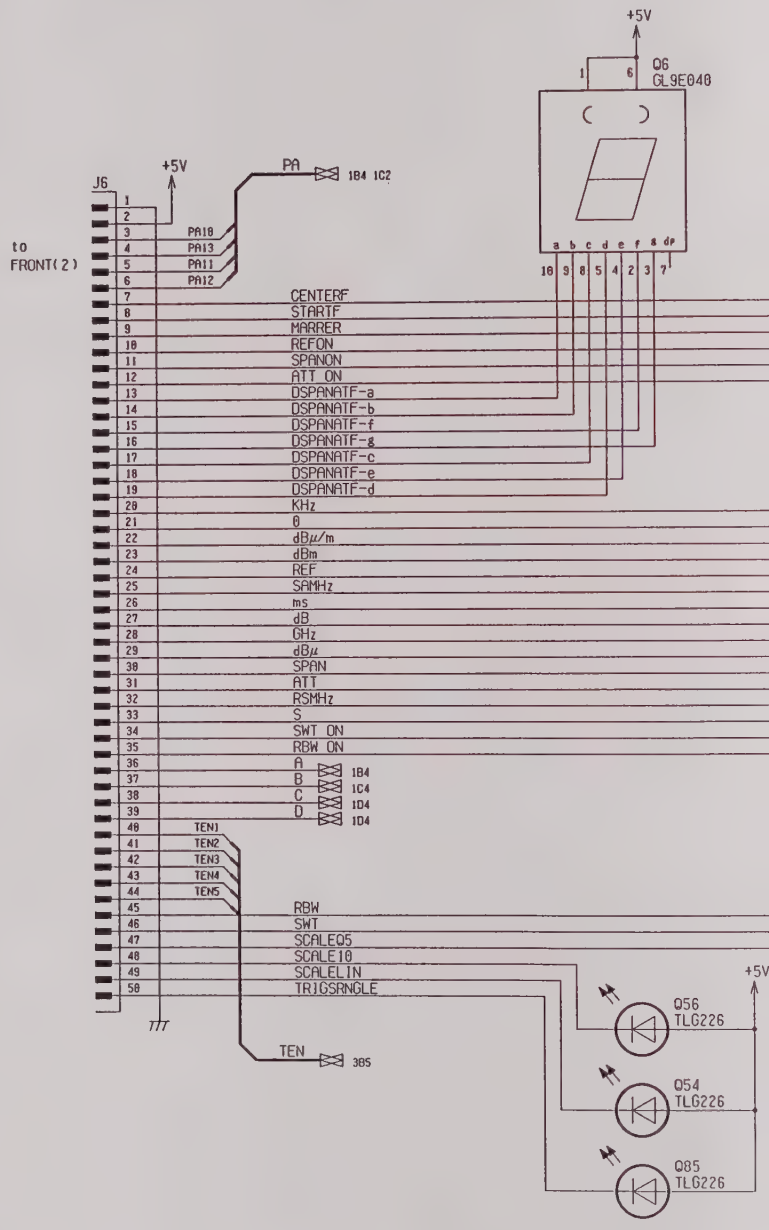
DRAWING No.

33W32342 1/3

33W32342

APPLICATION

DEP



REVISIONS
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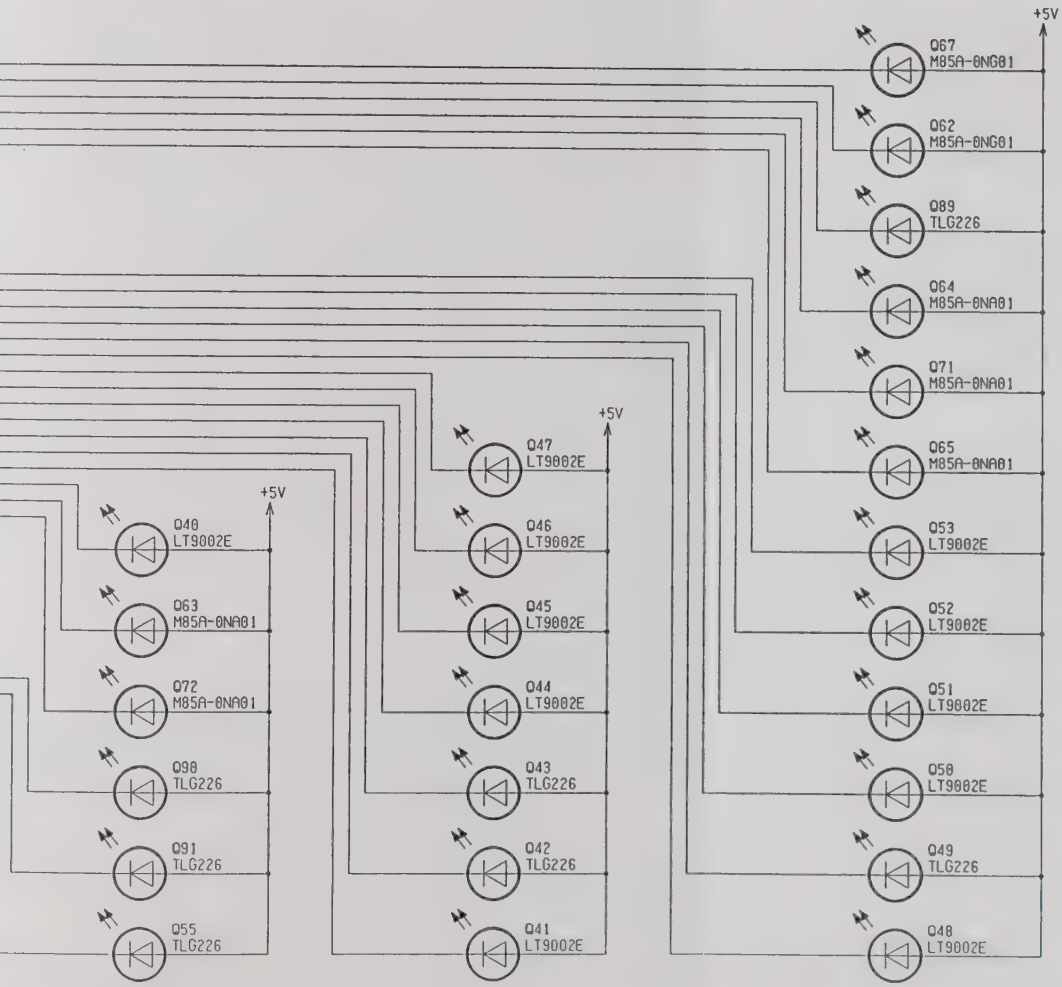


QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH

CHECKED BY		DRAWN BY	SCALE
APPROVED BY	H. Toda	DESIGNED BY	Satou

TITLE

FRONT (1) Circuit Diagram

DRAWING No.

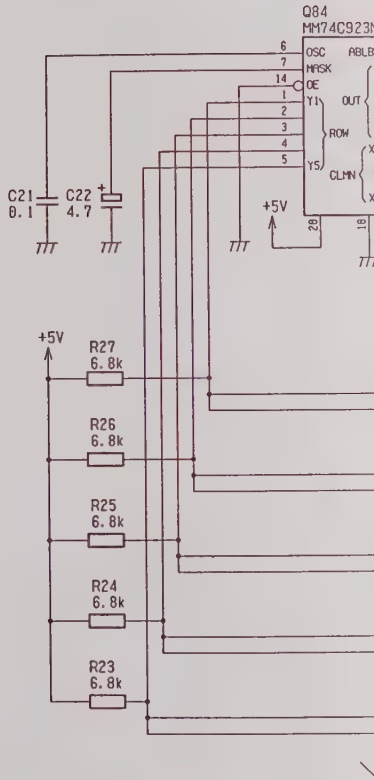
33W32342 2/3

4

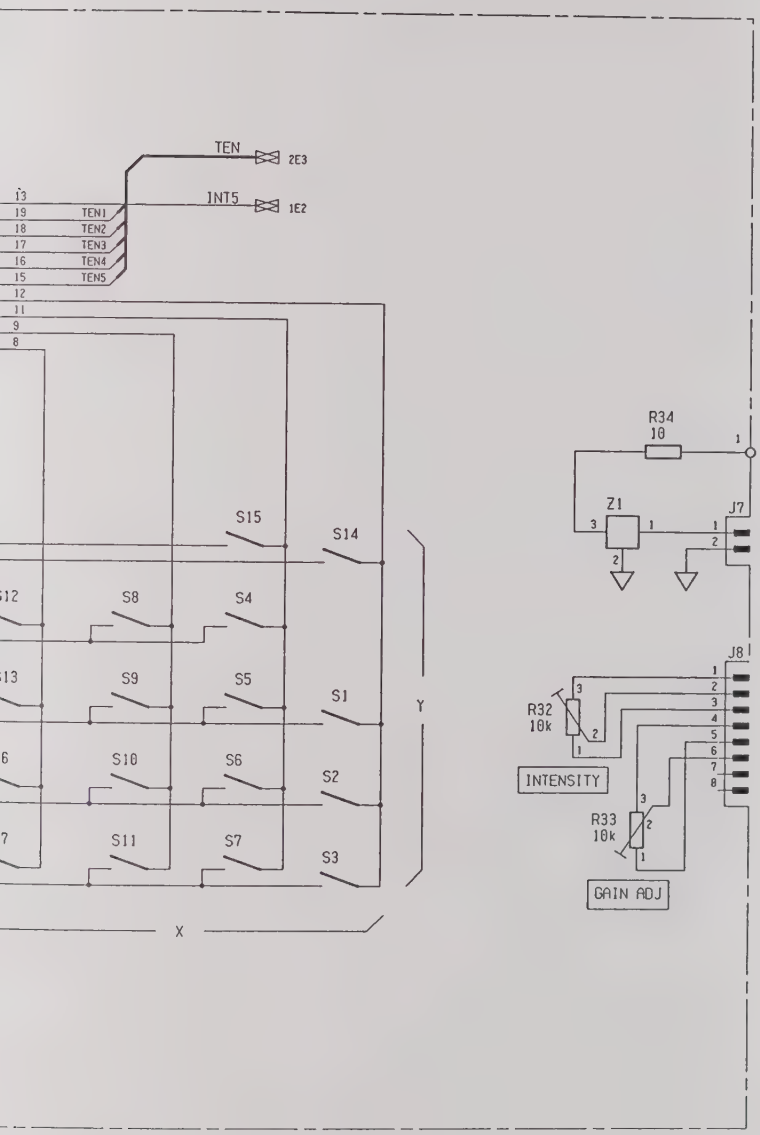
33W32342

APPLICATION

DEP



REVISIONS

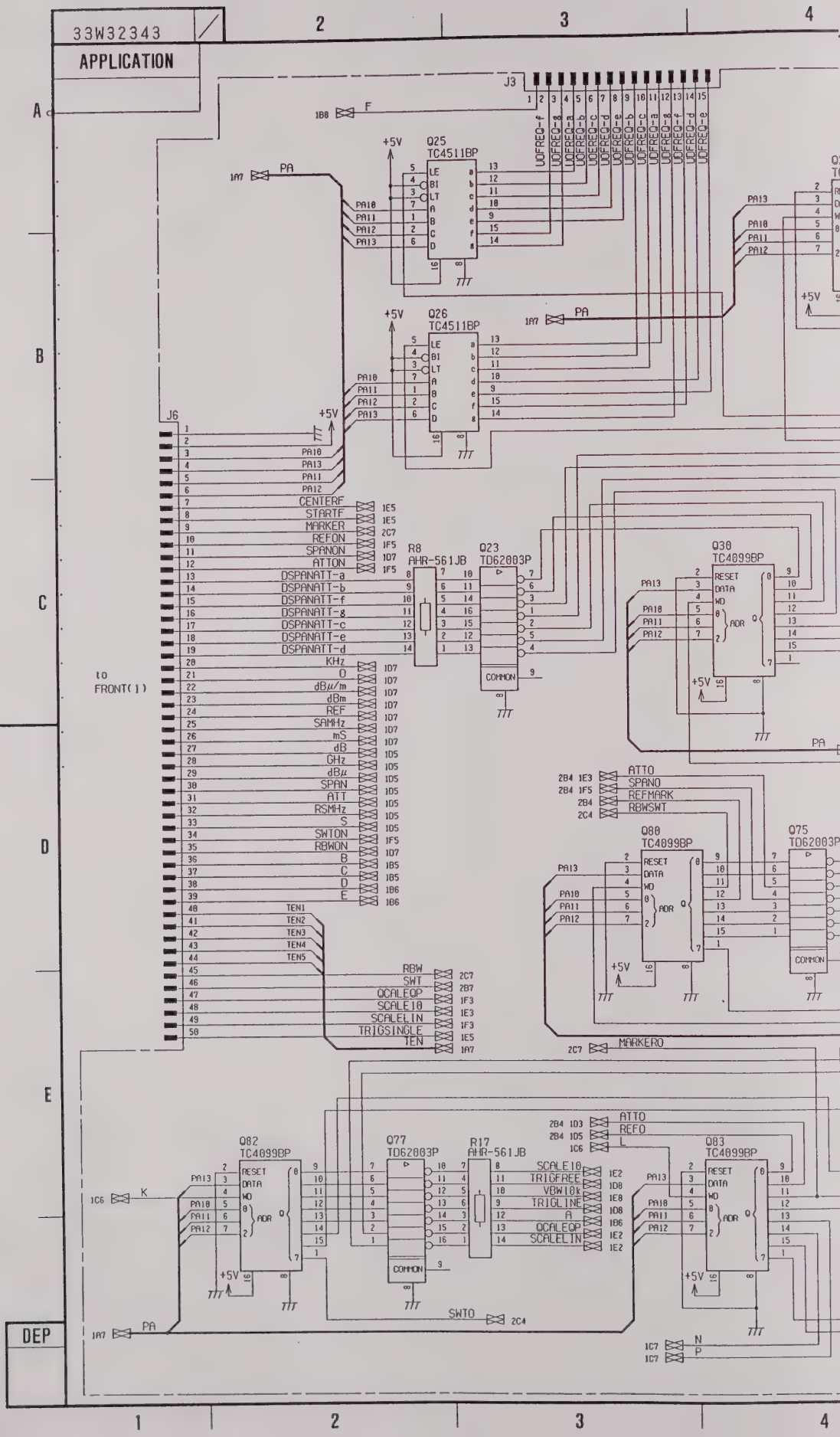


QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH

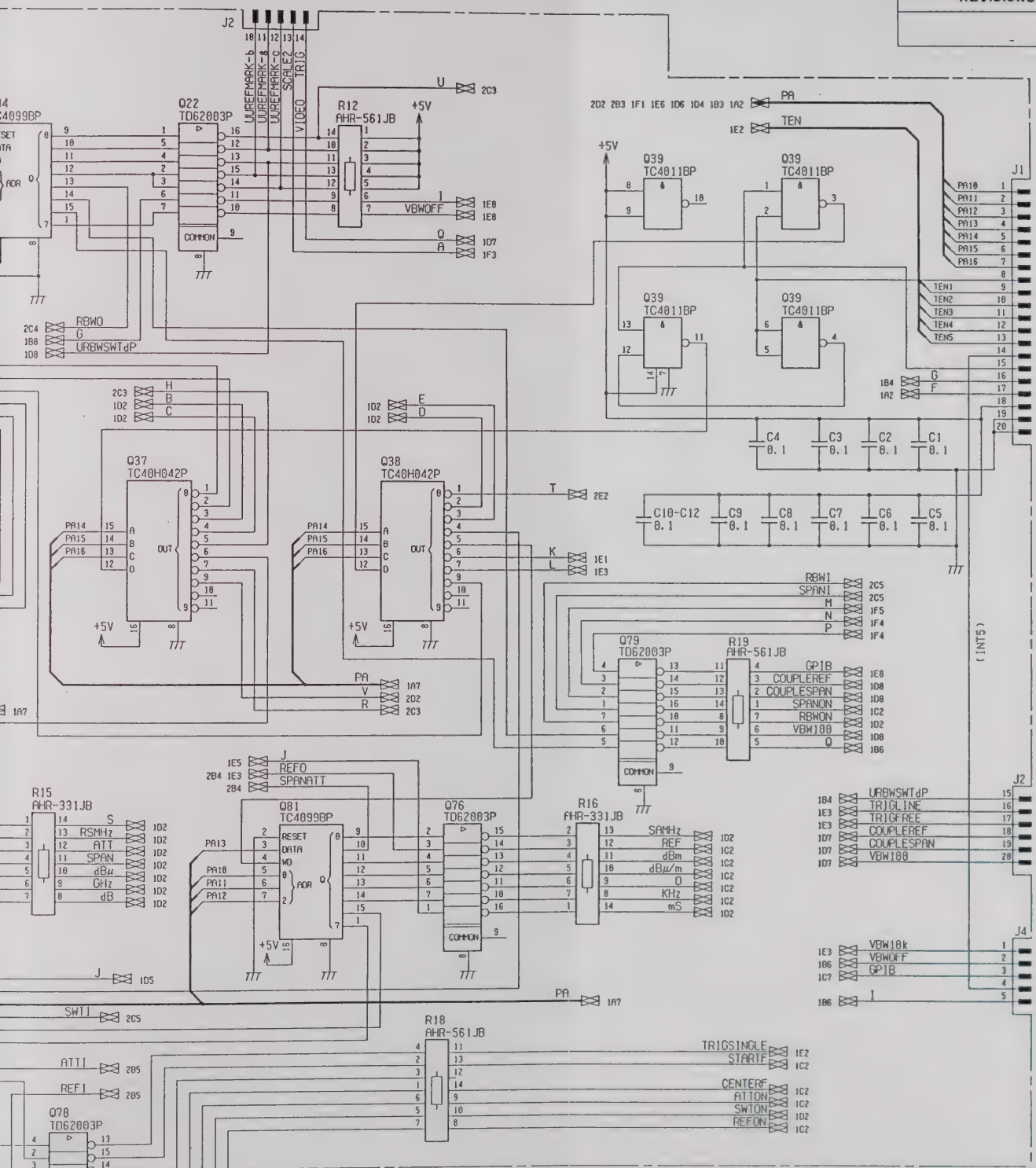
CHECKED BY	DRAWN BY	SCALE	4
APPROVED BY H. Toda	DESIGNED BY Satou	:	

TITLE: FRONT(1) Circuit Diagram

DRAWING No. 33W32342 3/3


33W32343
APPLICATION
DEP
J3
J6
Q25 TC4511BP
Q26 TC4511BP
Q23 TD62003P
R8 AHR-561JB
Q30 TC4099BP
Q80 TC4099BP
Q75 TD62003P
Q82 TC4099BP
Q77 TD62003P
R17 AHR-561JB
Q83 TC4099BP
to FRONT( )
PA
+5V
COMMON
MARKER0
SWTO

REVISIONS



QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH

CHECKED BY	DRAWN BY	SCALE	
APPROVED BY H. Toda	DESIGNED BY Satou	:	

PARTS LIST 34W85989

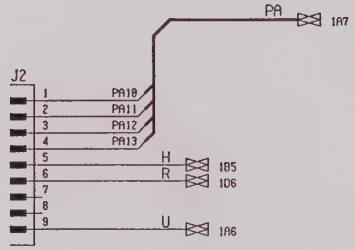
TITLE: FRONT(2) Circuit Diagram

DRAWING No. 33W32343 1/2

33W32343

APPLICATION

DEP



1D3 REFMARK

1E3 1D5 REFO

1E3 1D3 ATTO

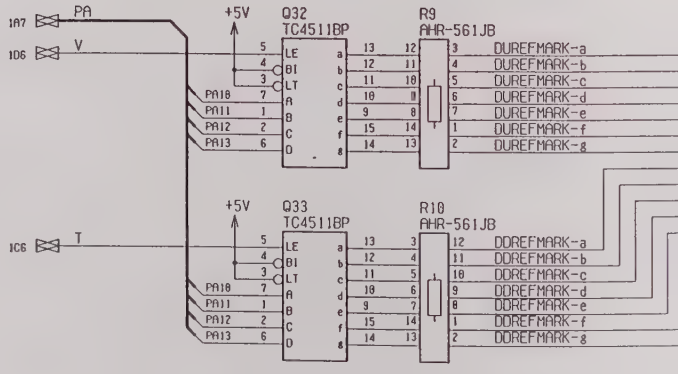
1D5 SPANATT

1F5 1D3 SPANO

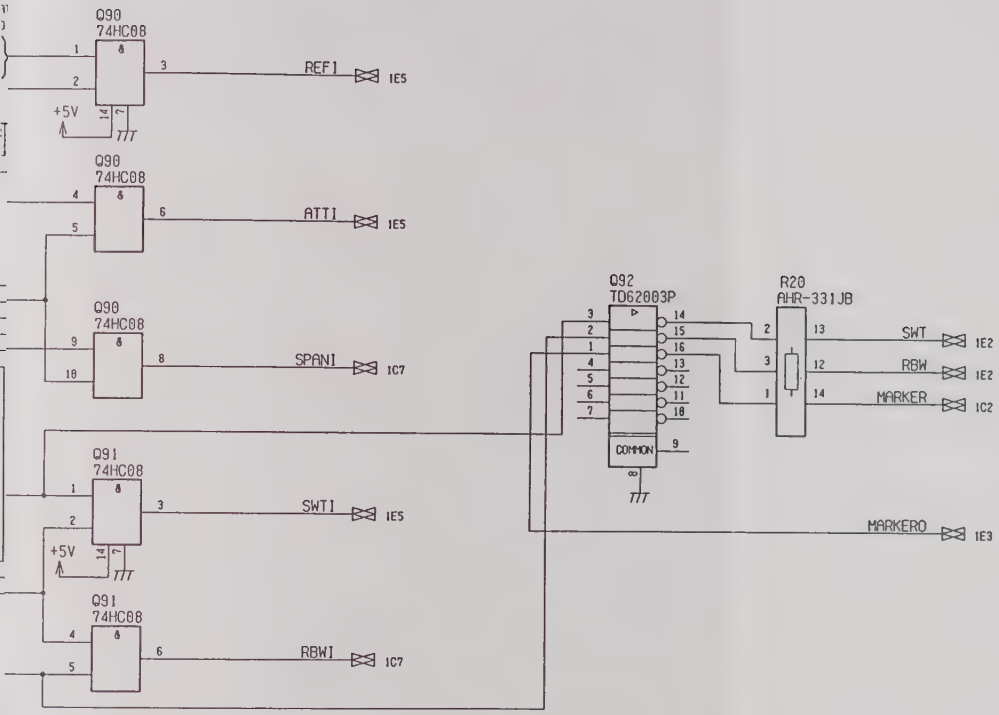
1F3 SWTO

1D3 RBWSWT

1B4 RBWO



REVISIONS
-



QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH

CHECKED BY	DRAWN BY	SCALE
APPROVED BY N. Toda	DESIGNED BY Satou	:

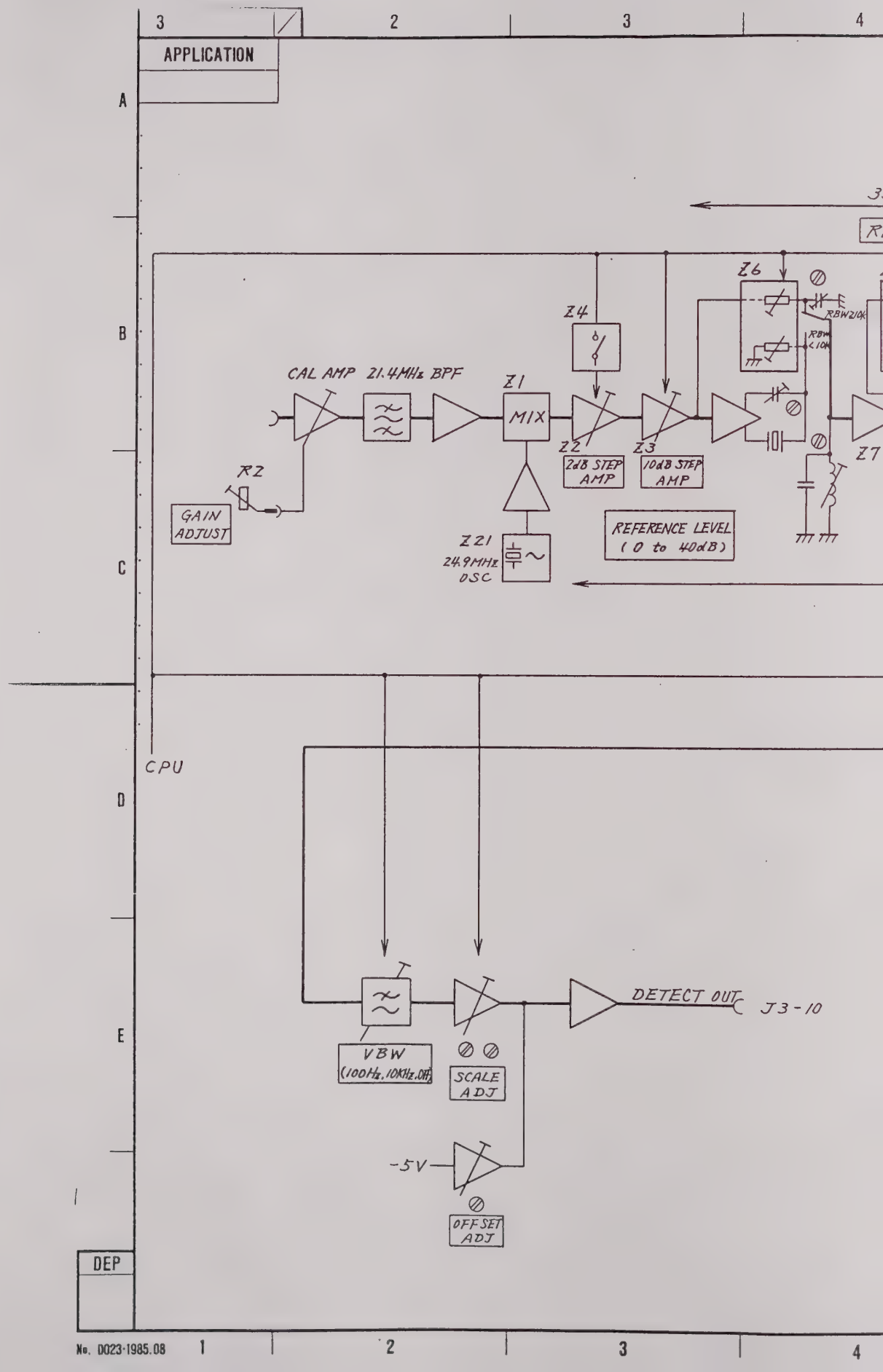
TITLE

FRONT(2) Circuit Diagram

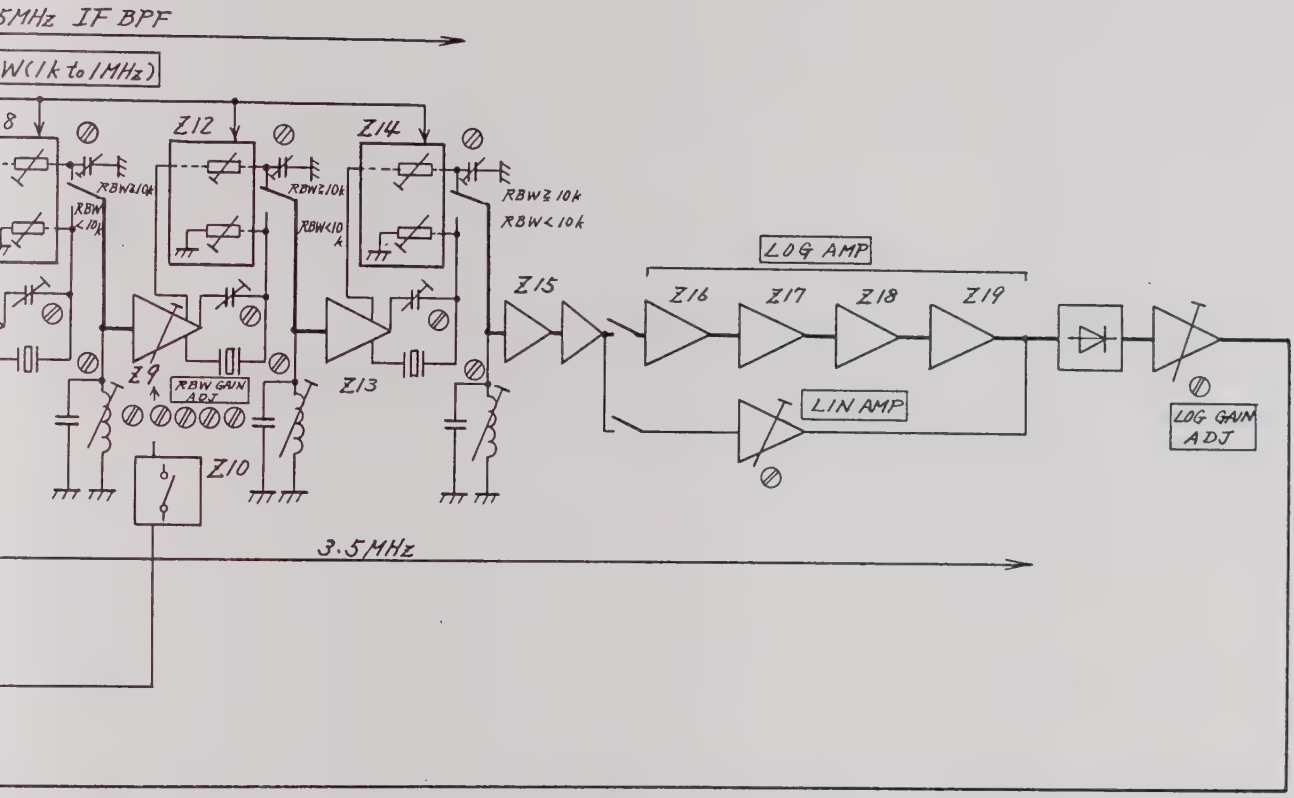
DRAWING No.

33W32343 2/2

5


APPLICATION
DEP
CAL AMP
21.4MHz BPF
Z1
MIX
Z2
2dB STEP AMP
Z3
10dB STEP AMP
Z4
Z6
Z7
RBW2(0K
RBW<10K
RZ
GAIN ADJUST
Z21
24.9MHz OSC
REFERENCE LEVEL (0 to 40dB)
CPU
VBW (100Hz, 10KHz, Off)
SCALE ADJ
DETECT OUT
J3-10
-5V
OFFSET ADJ

REVISIONS



6

QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH	NOTE

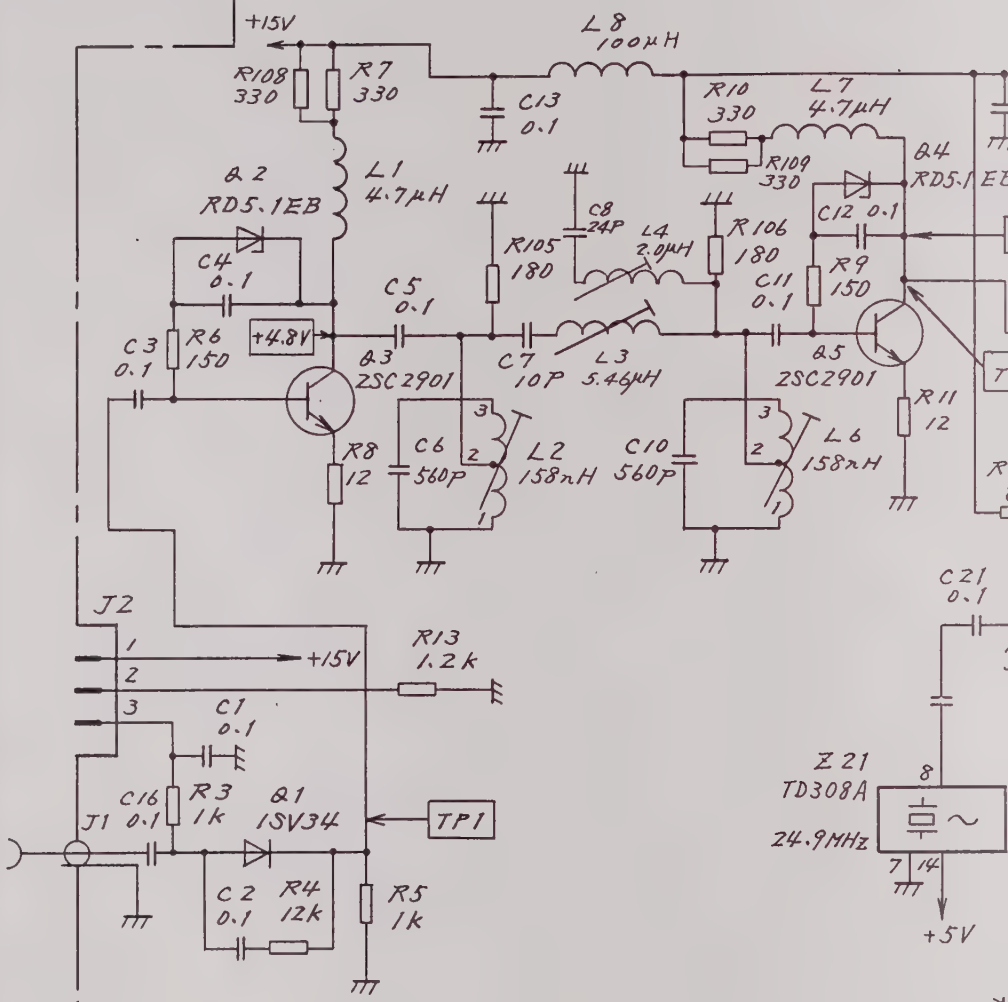
CHECKED BY	TRACED BY	SCALE :
APPROVED BY	DRAWN BY	
TITLE: IF Block		DRAWING No. 3

ANRITSU CORP.

4-19/4-20

APPLICATION

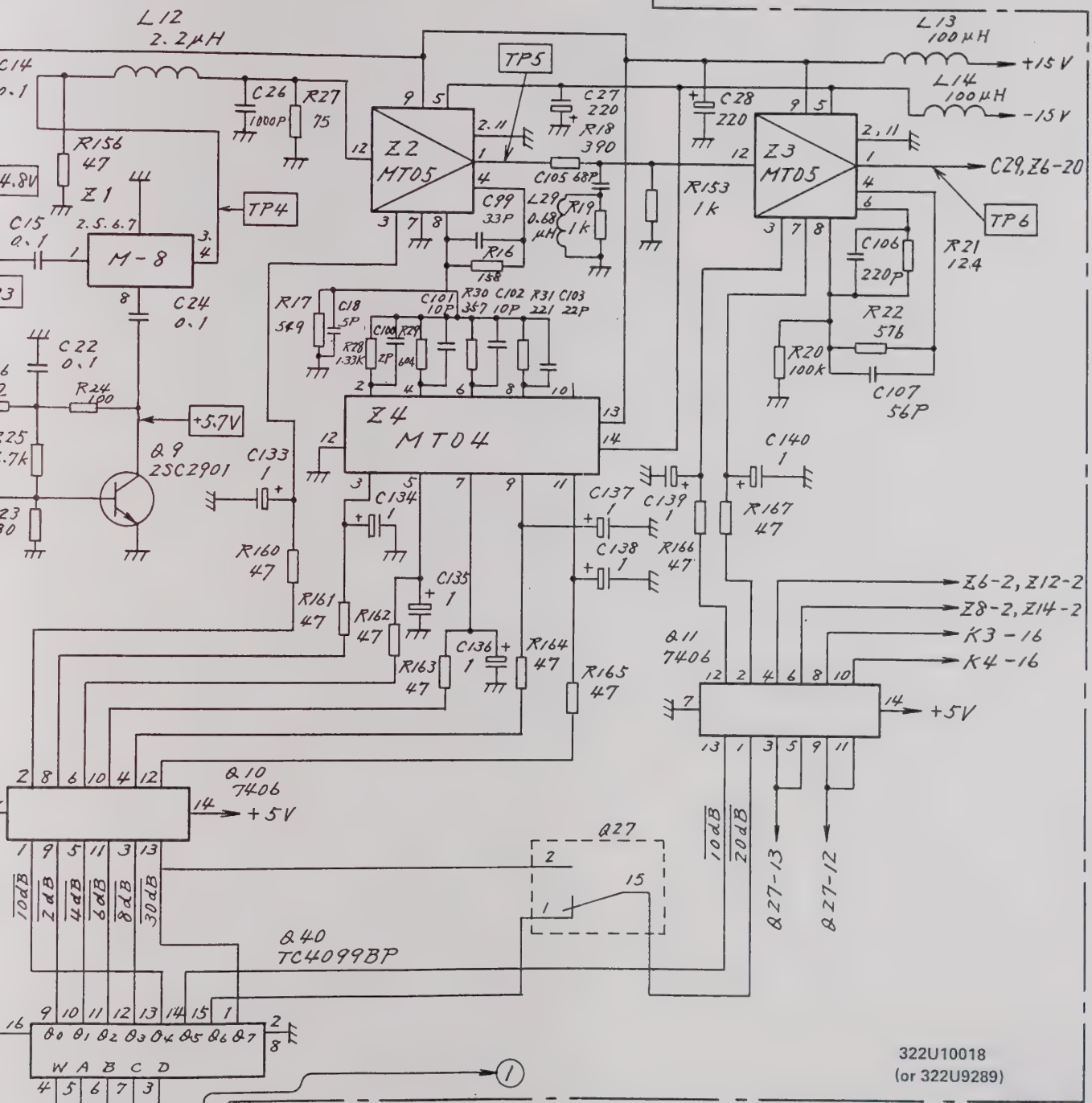
34Y83835



DEP

Parts List 34W89580

REVISIONS

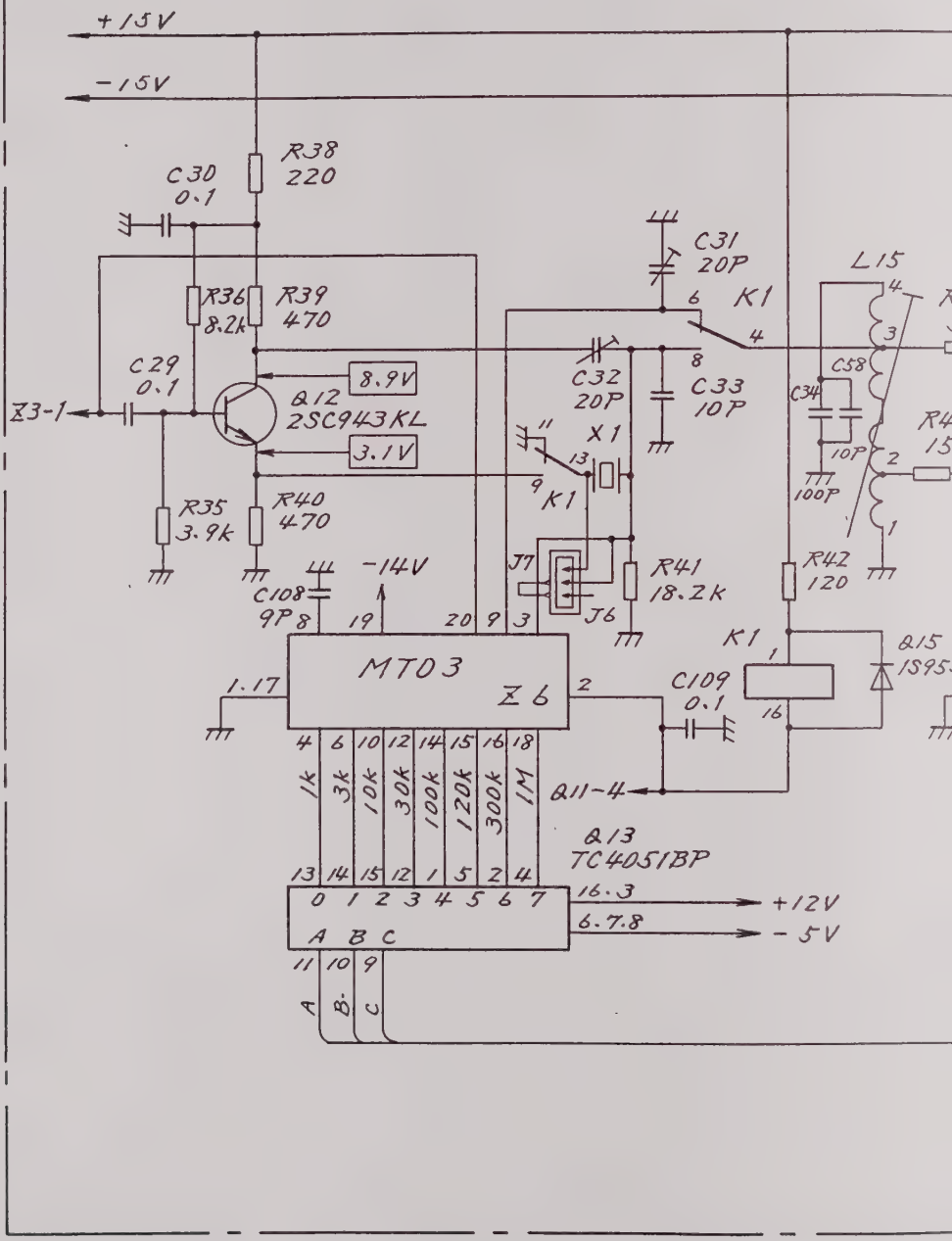


QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH
CHECKED BY		TRACED BY		SCALE	
APPROVED BY		DRAWN BY		:	

TITLE: IF Circuit Diagram

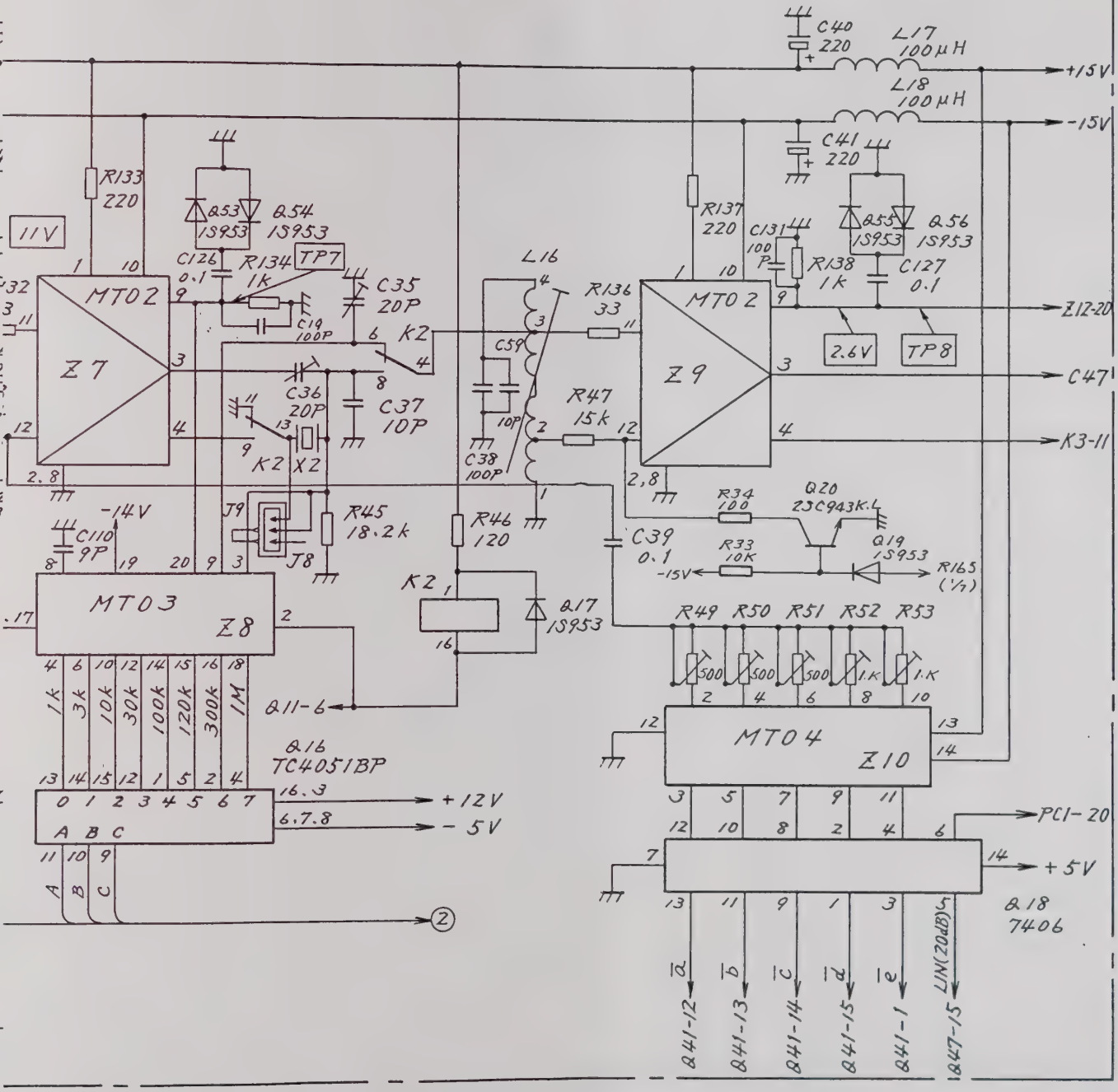
DRAWING No. 33W28093 1/7

7


+15V
-15V
R38 220
C30 0.1
R36 8.2k
R39 470
C29 0.1
X3-1
Q12 2SC943KL
8.9V
3.1V
R35 3.9k
R40 470
C108 9P
-14V
C31 20P
K1
C32 20P
C33 10P
X1
K1
J7
J6
R41 18.2k
L15
C58
C34
10P
100P
R42 120
Q15 1S95
MT03
IC6
1.17
C109 0.1
Q11-4
Q13 TC4051BP
1k
3k
10k
30k
100k
120k
300k
1M
A B C
16.3
+12V
6.7.8
-5V

DEP

REVISIONS



QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH

CHECKED BY	TRACED BY	SCALE :
APPROVED BY	DRAWN BY	

TITLE: IF Circuit Diagram

DRAWING No. 33WZ8093 2/7

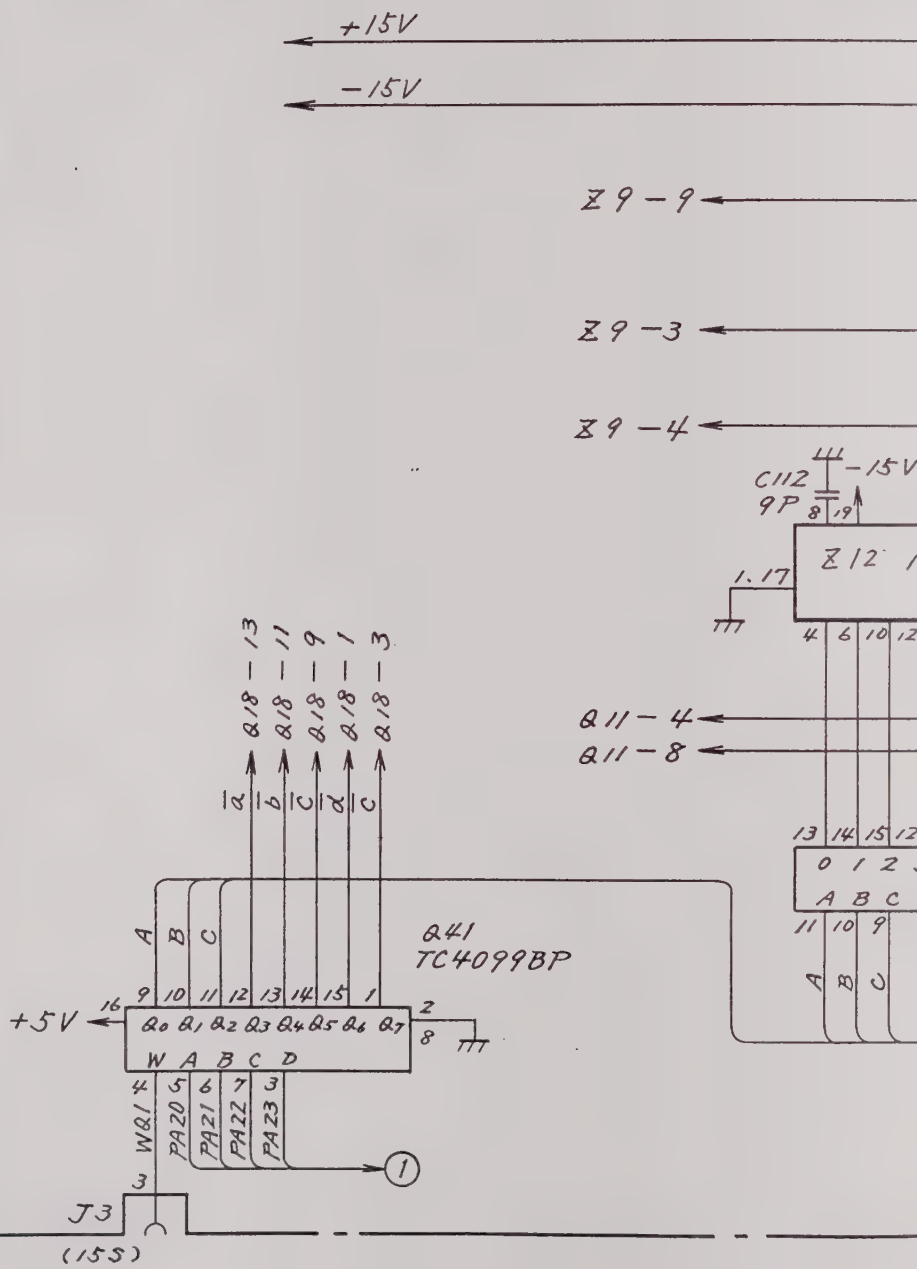
7

ANRITSU CORP.

4-23/4-24

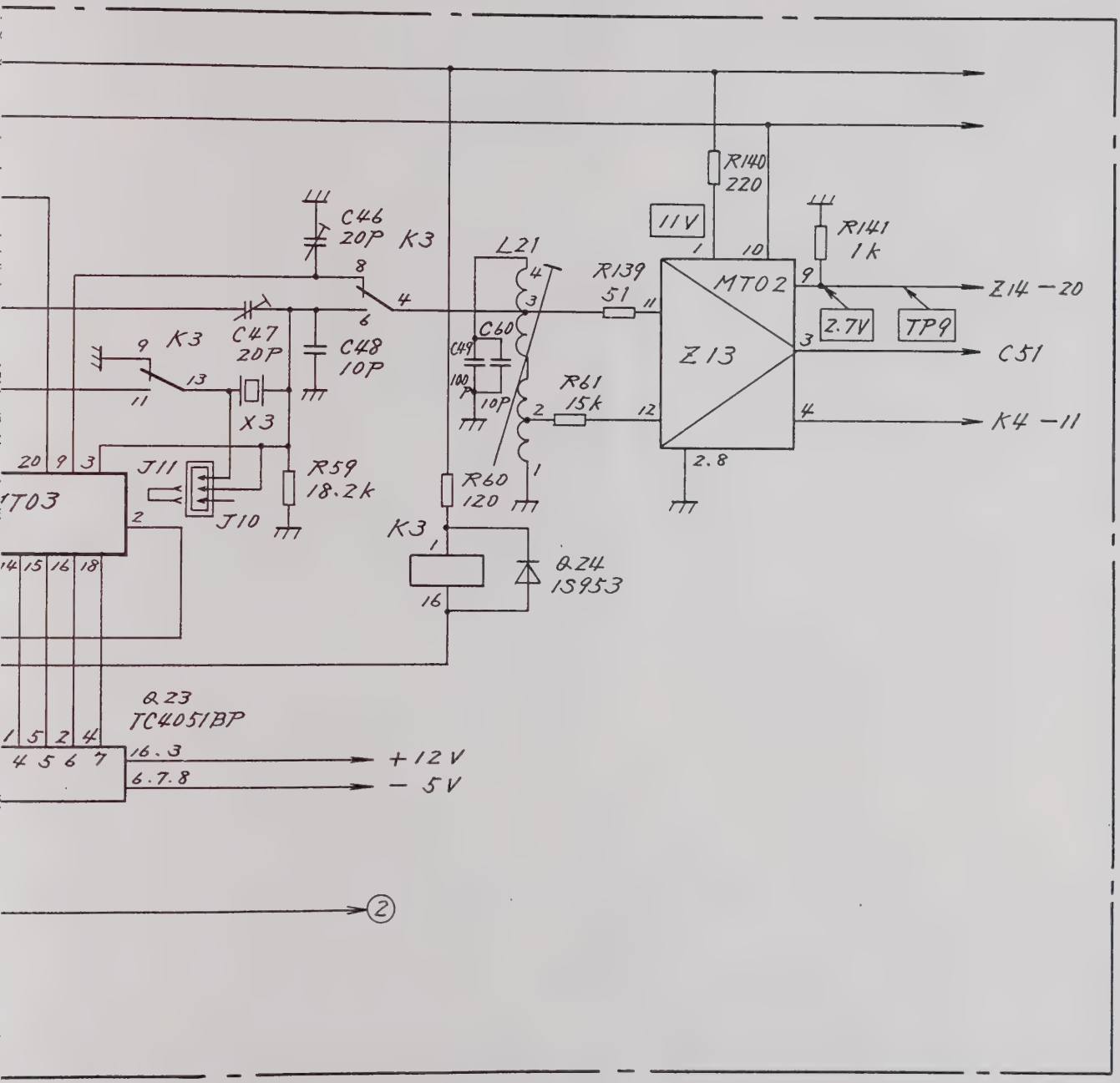
APPLICATION

34Y83835



DEP

REVISIONS



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CHECKED BY	TRACED BY	SCALE	7
APPROVED BY	DRAWN BY	:	

TITLE: IF Circuit Diagram

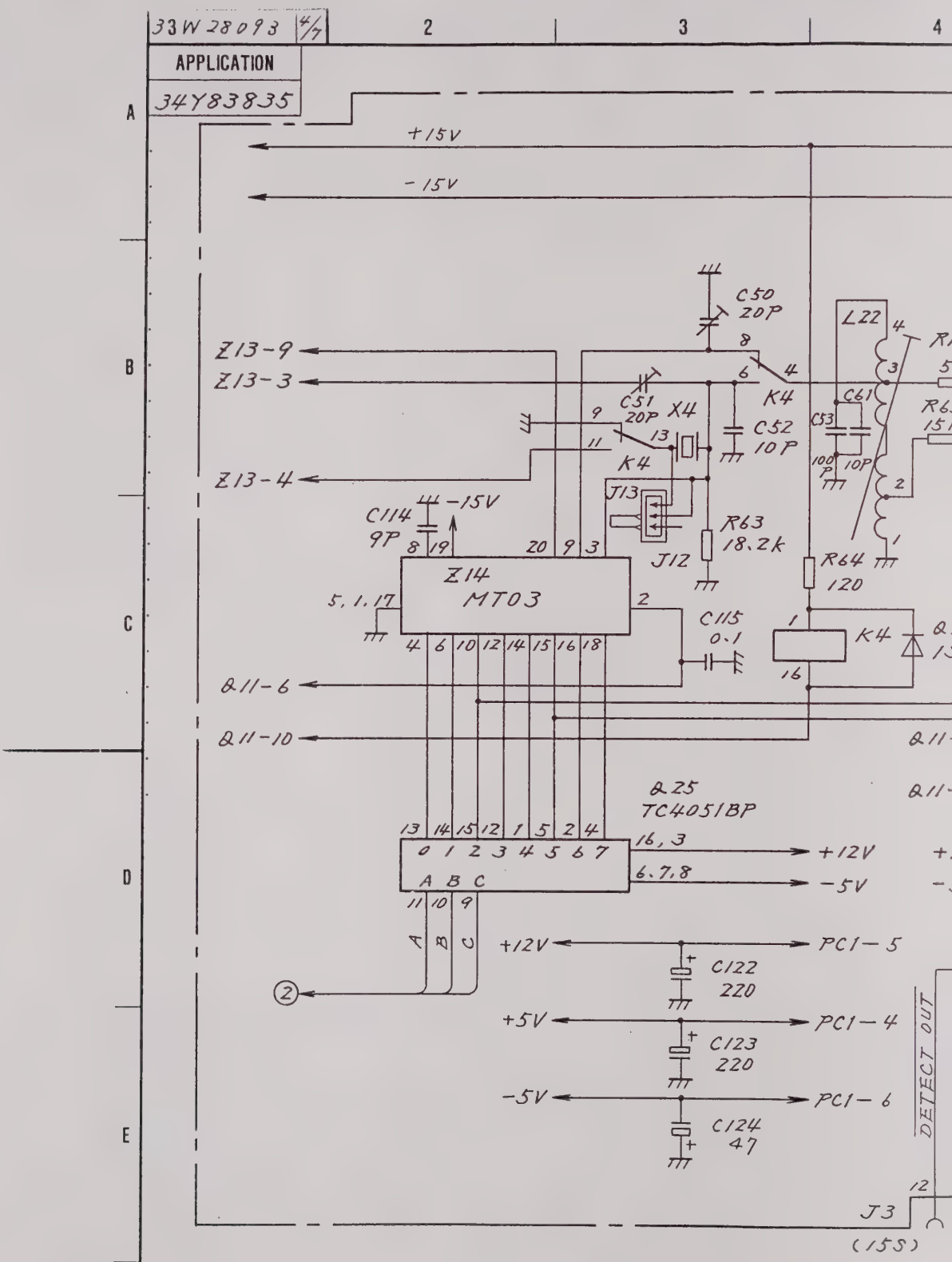
DRAWING No. 33W28093 3/7

ANRITSU CORP.

4-25/4-26

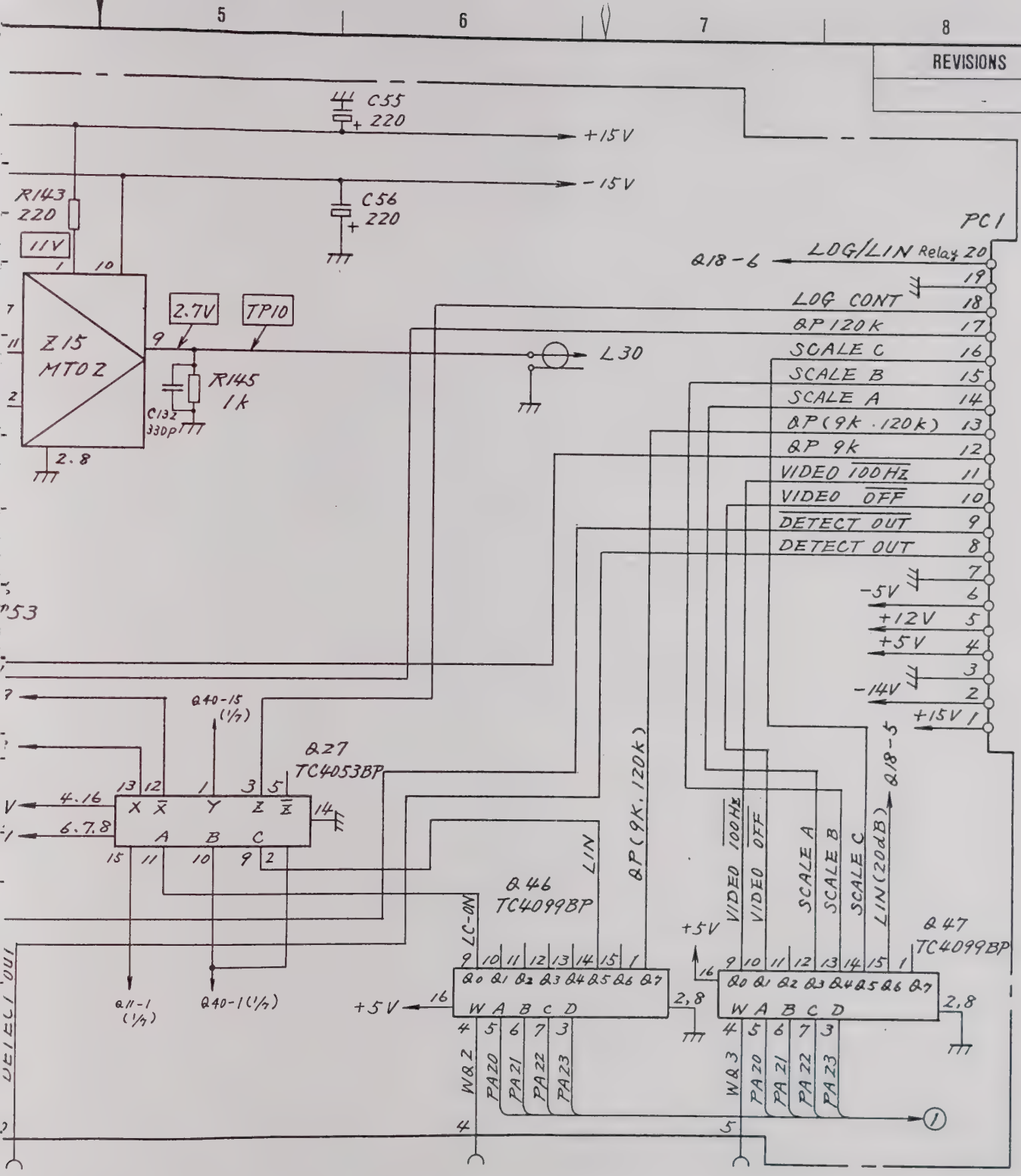
APPLICATION

34Y83835



DEP

REVISIONS



QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH

CHECKED BY	TRACED BY	SCALE
APPROVED BY	DRAWN BY	:

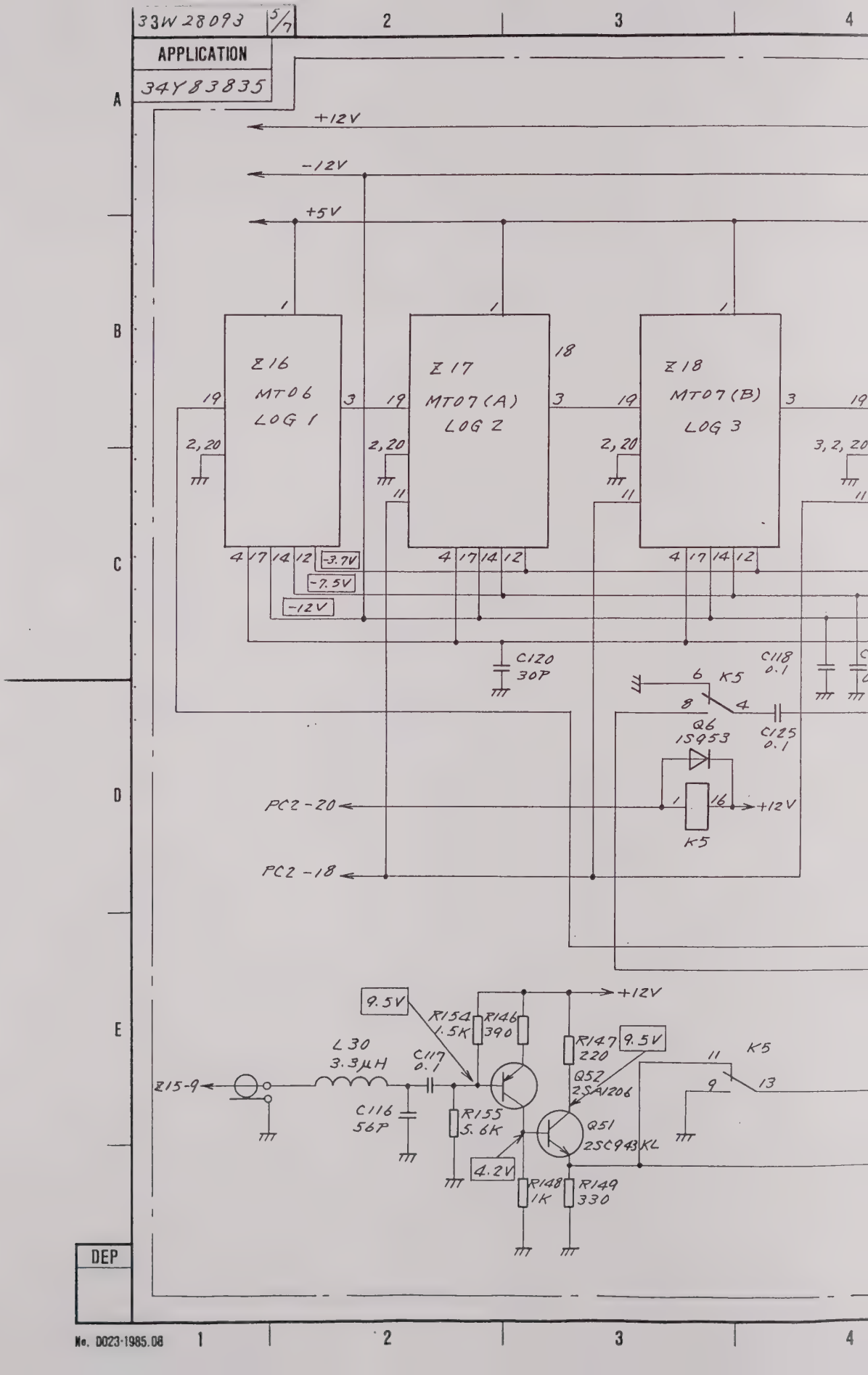
TITLE: IF Circuit Diagram

DRAWING No. 33W28093 4/7

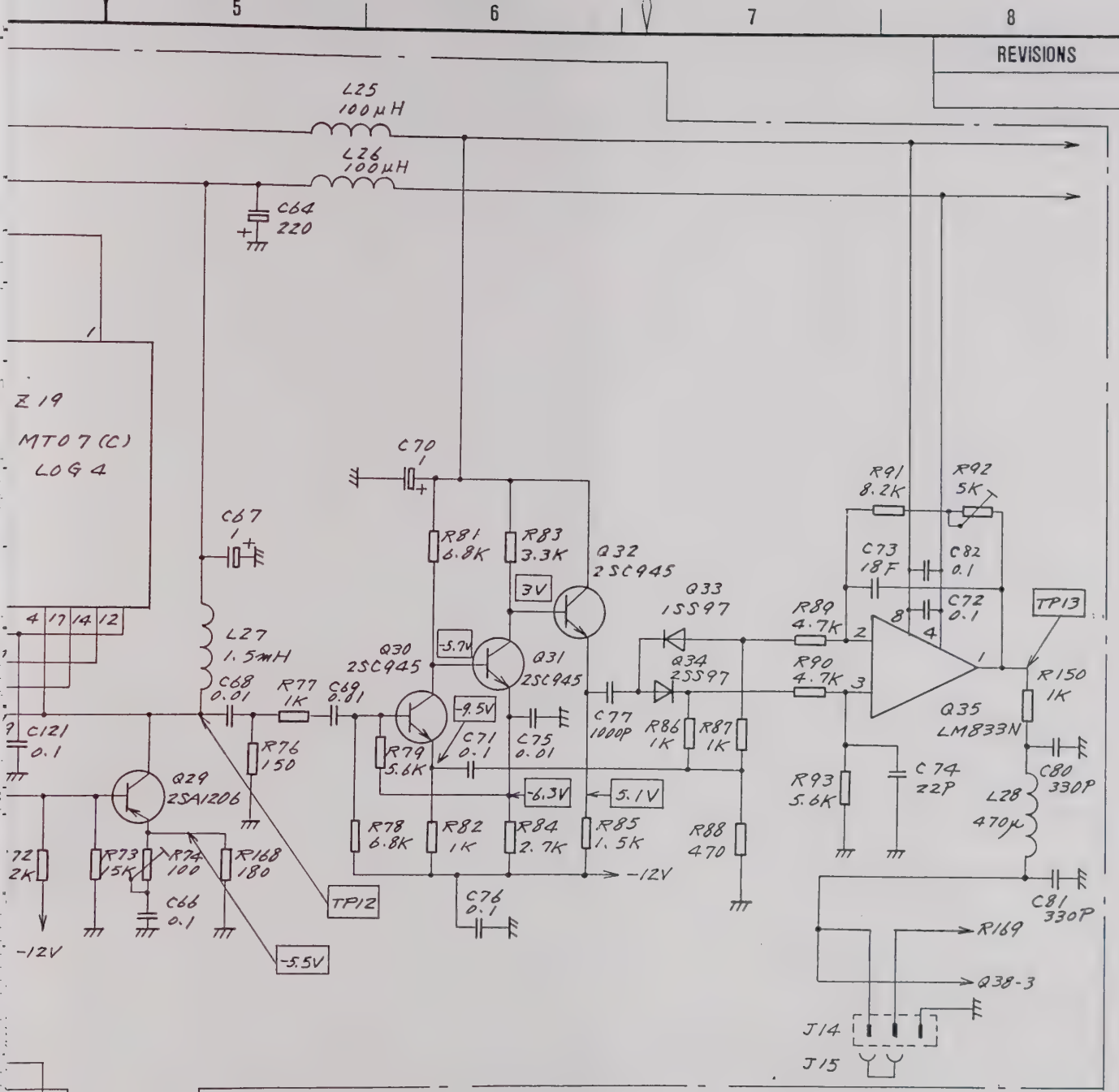
7

ANRITSU CORP.

4-27/4-28


33W28093 5/7
APPLICATION
34Y83835
DEP
+12V
-12V
+5V
Z16 MT06 LOG 1
Z17 MT07(A) LOG 2
Z18 MT07(B) LOG 3
-3.7V
-7.5V
-12V
C120 30P
C118 0.1
C125 0.1
K5
Q6 1S953
PC2-20
PC2-18
9.5V
R154 1.5K
R146 390
R147 220
L30 3.3μH
C117 0.1
Z15-9
C116 56P
R155 5.6K
Q52 2SA1206
Q51 2SC943KL
4.2V
R148 1K
R149 330

REVISIONS



QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH

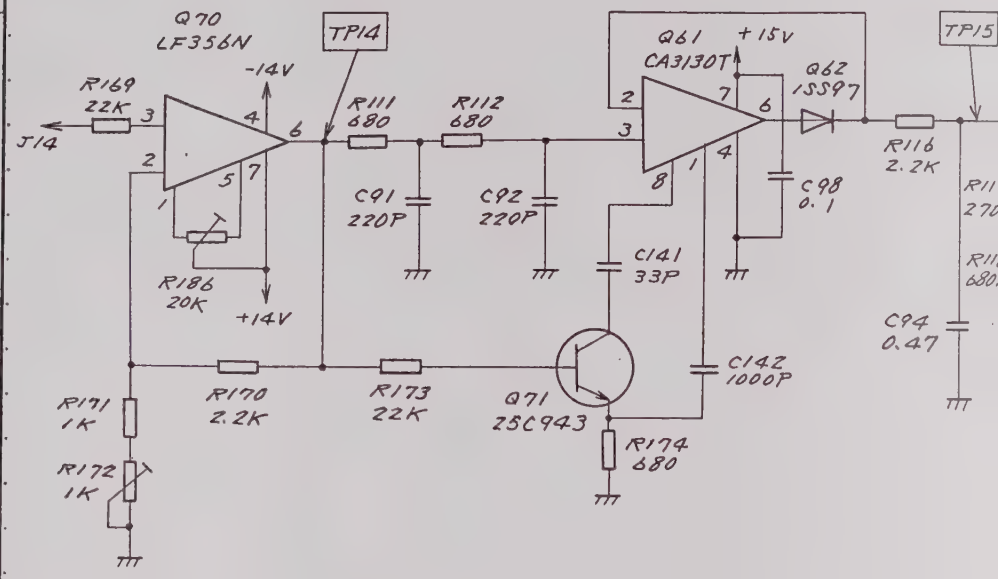
CHECKED BY	TRACED BY	SCALE	
APPROVED BY	DRAWN BY	:	

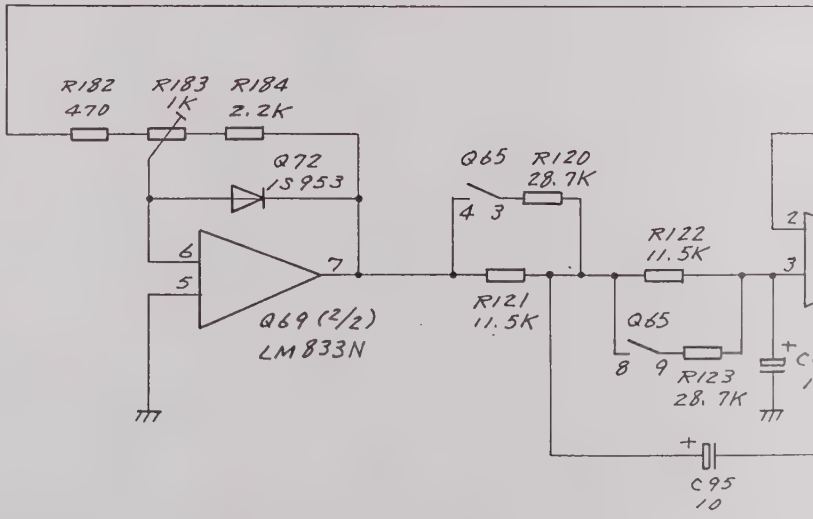
TITLE: IF Circuit Diagram

DRAWING No. 33W28093 5/7

7

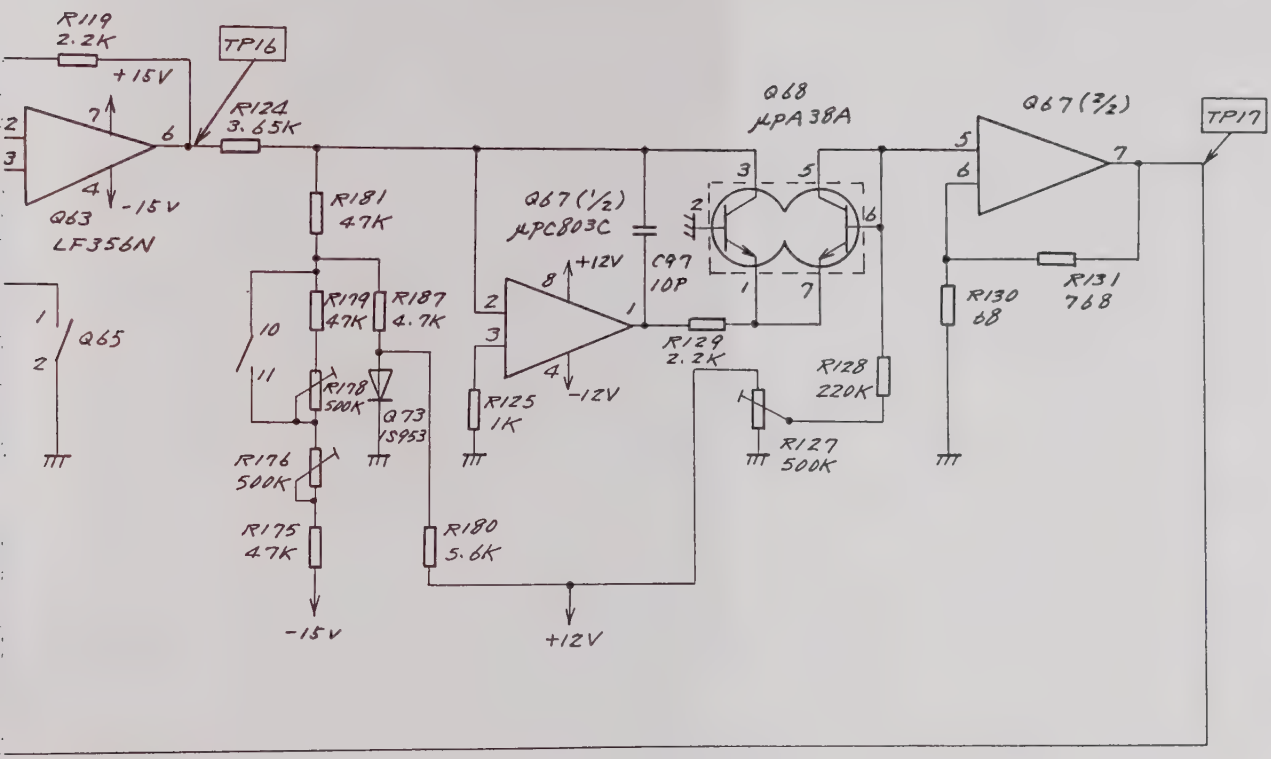
APPLICATION

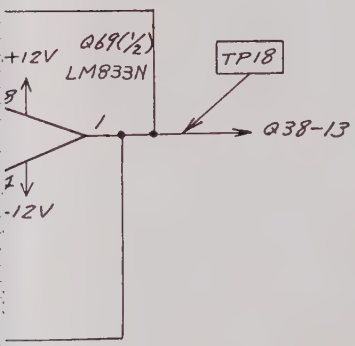


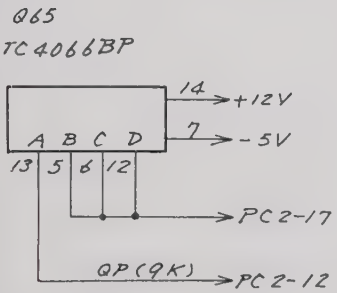


DEP

REVISIONS







QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH

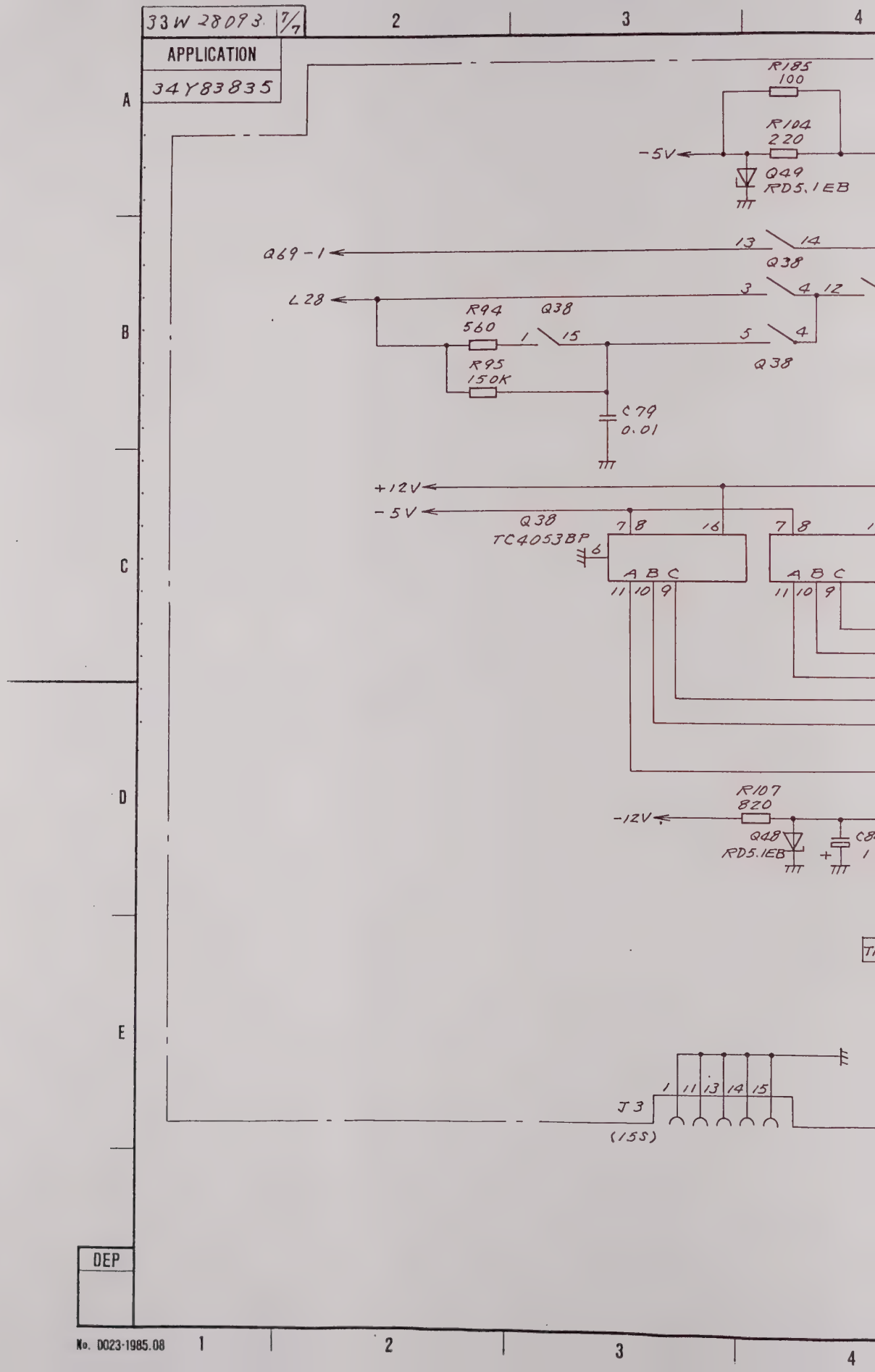
CHECKED BY	TRACED BY	SCALE	7
APPROVED BY	DRAWN BY	:	

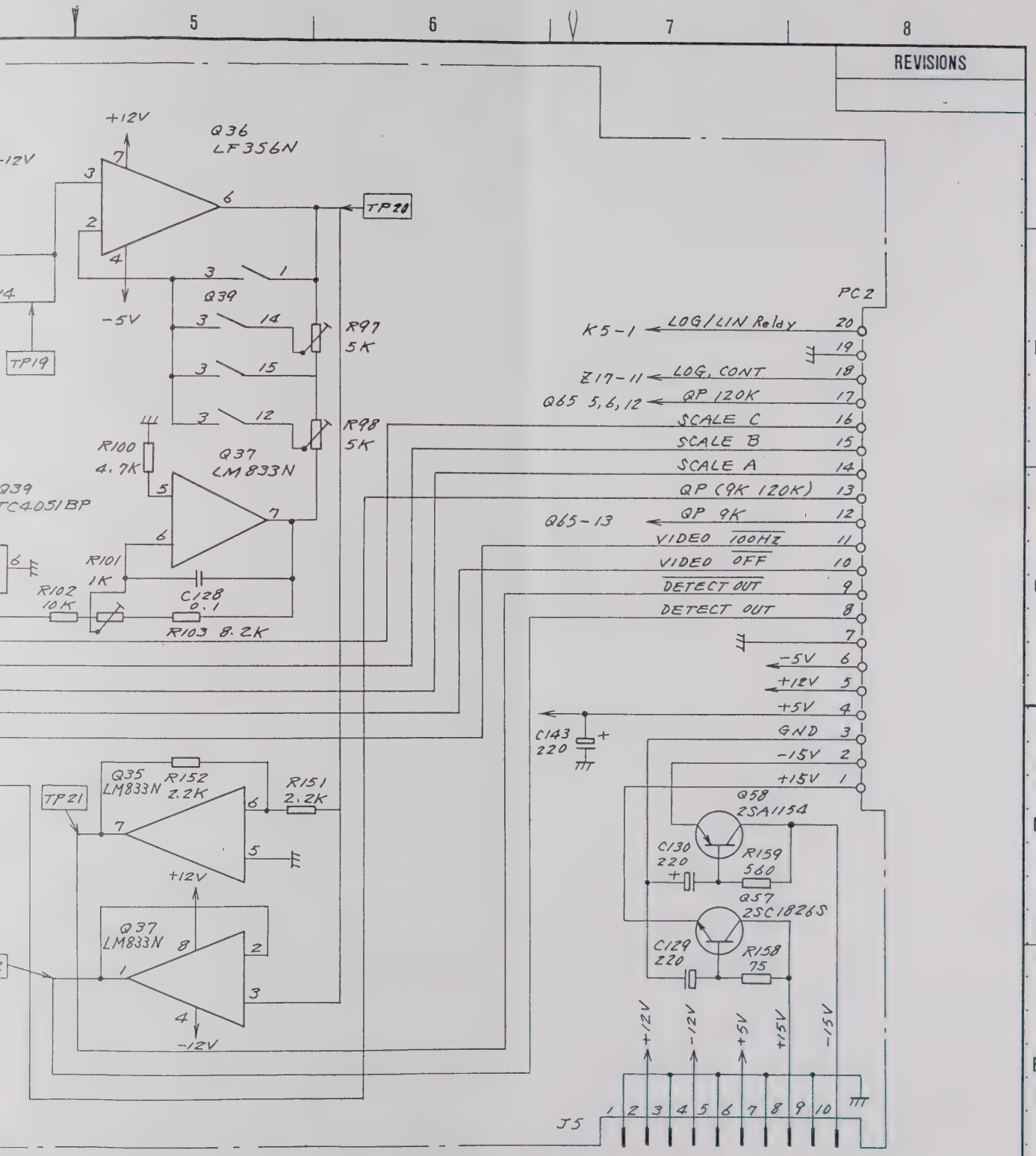
TITLE: IF (QP detector) Circuit Diagram

DRAWING No. 33W28093 6/7

APPLICATION

34Y83835



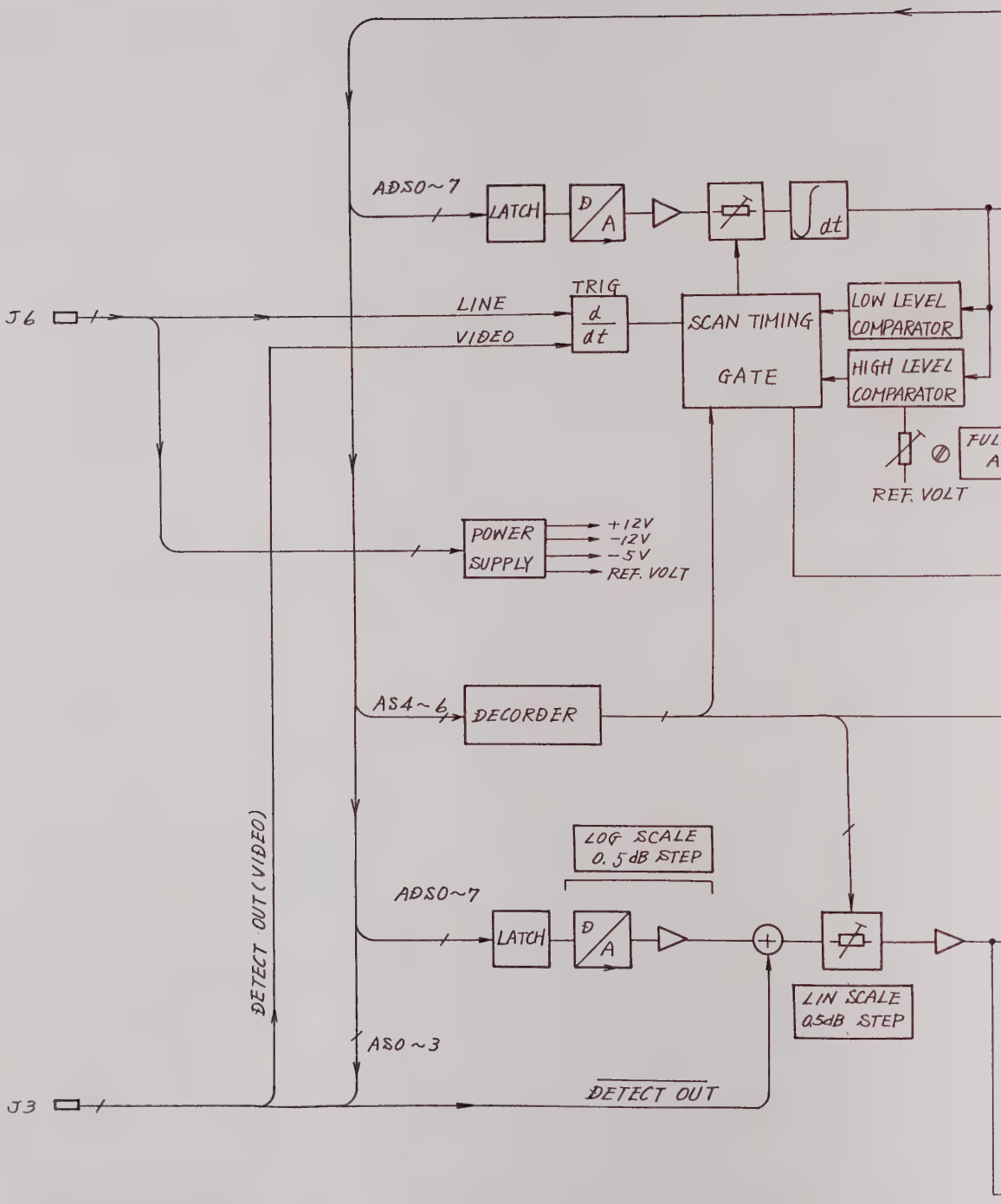


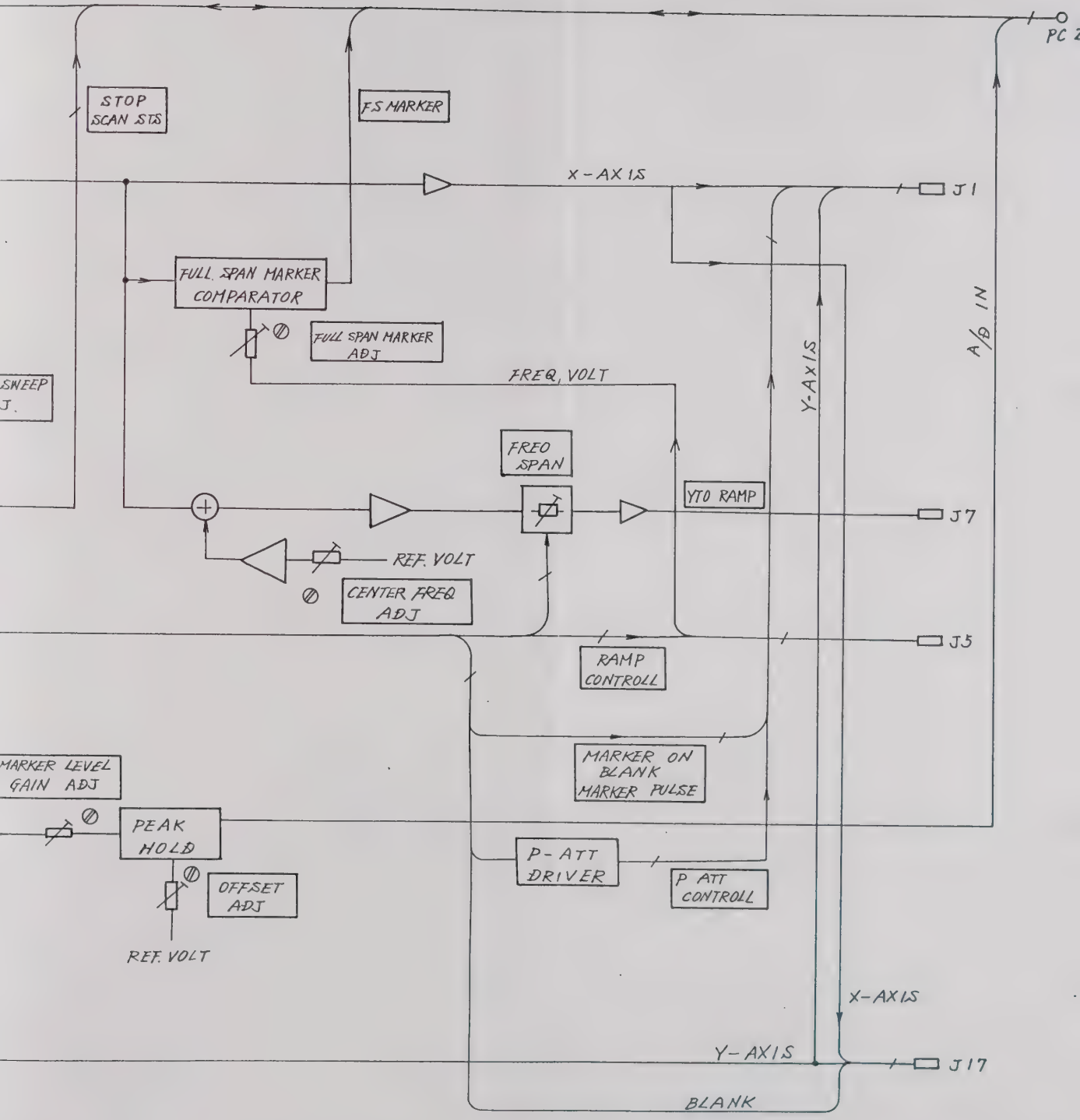
QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH

CHECKED BY	TRACED BY	SCALE	7
APPROVED BY	DRAWN BY	: M-1	
TITLE: I F Circuit Diagram		DRAWING No. 33W28093	7/7

ANRITSU CORP.

4-33/4-34

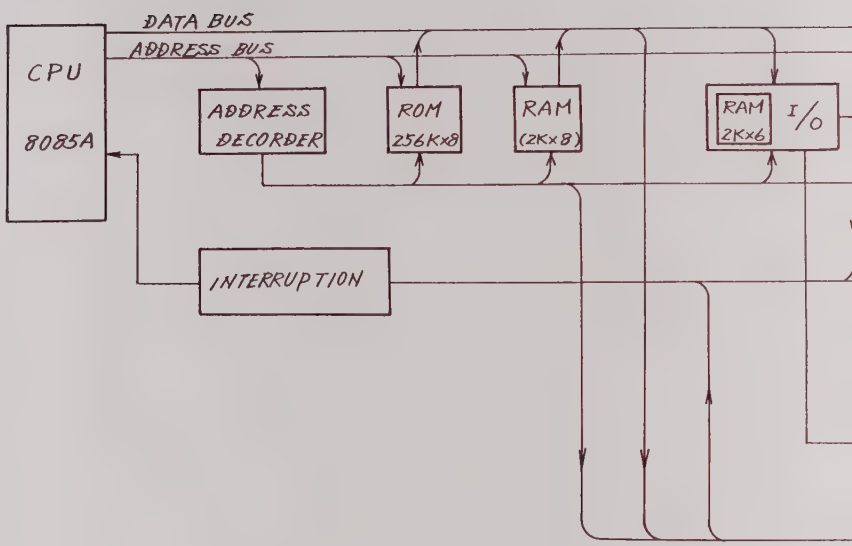

AD50~7
LATCH
D/A
∫dt
J6
LINE
VIDEO
TRIG
d/dt
SCAN TIMING
GATE
LOW LEVEL COMPARATOR
HIGH LEVEL COMPARATOR
REF. VOLT
POWER SUPPLY
+12V
-12V
-5V
REF. VOLT
AS4~6
DECORDER
LOG SCALE
0.5dB STEP
AD50~7
LATCH
D/A
LIN SCALE
0.5dB STEP
DETECT OUT (VIDEO)
AS0~3
J3
DETECT OUT

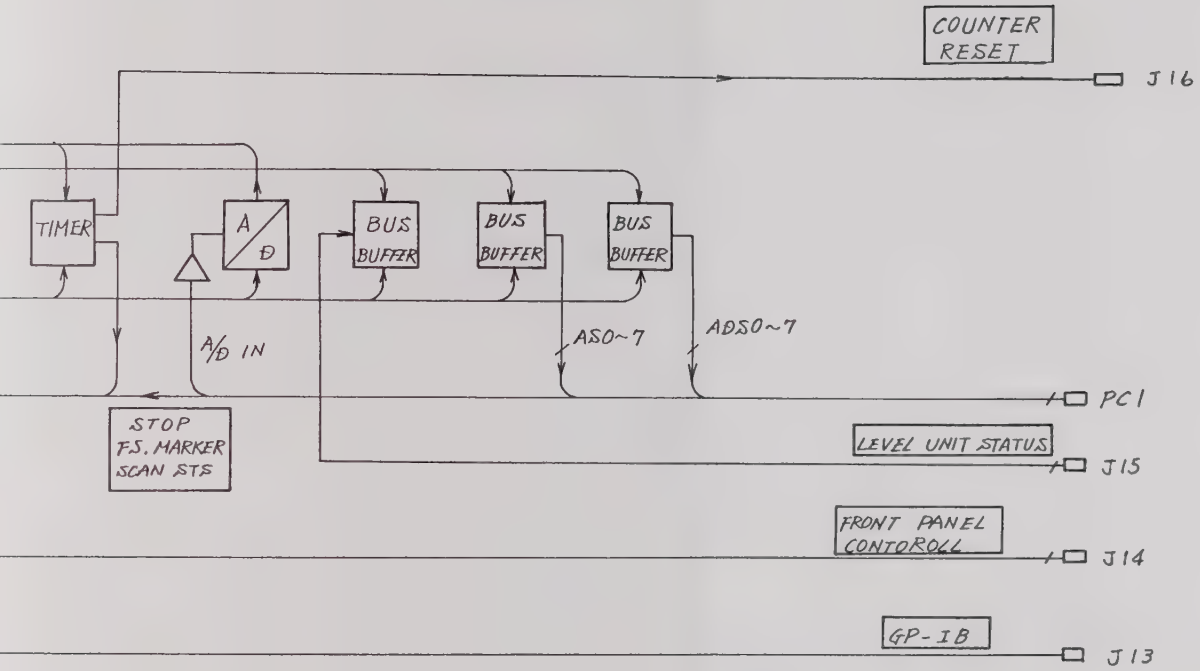


SCAN & CPU

Block Diagram (SCAN)

8

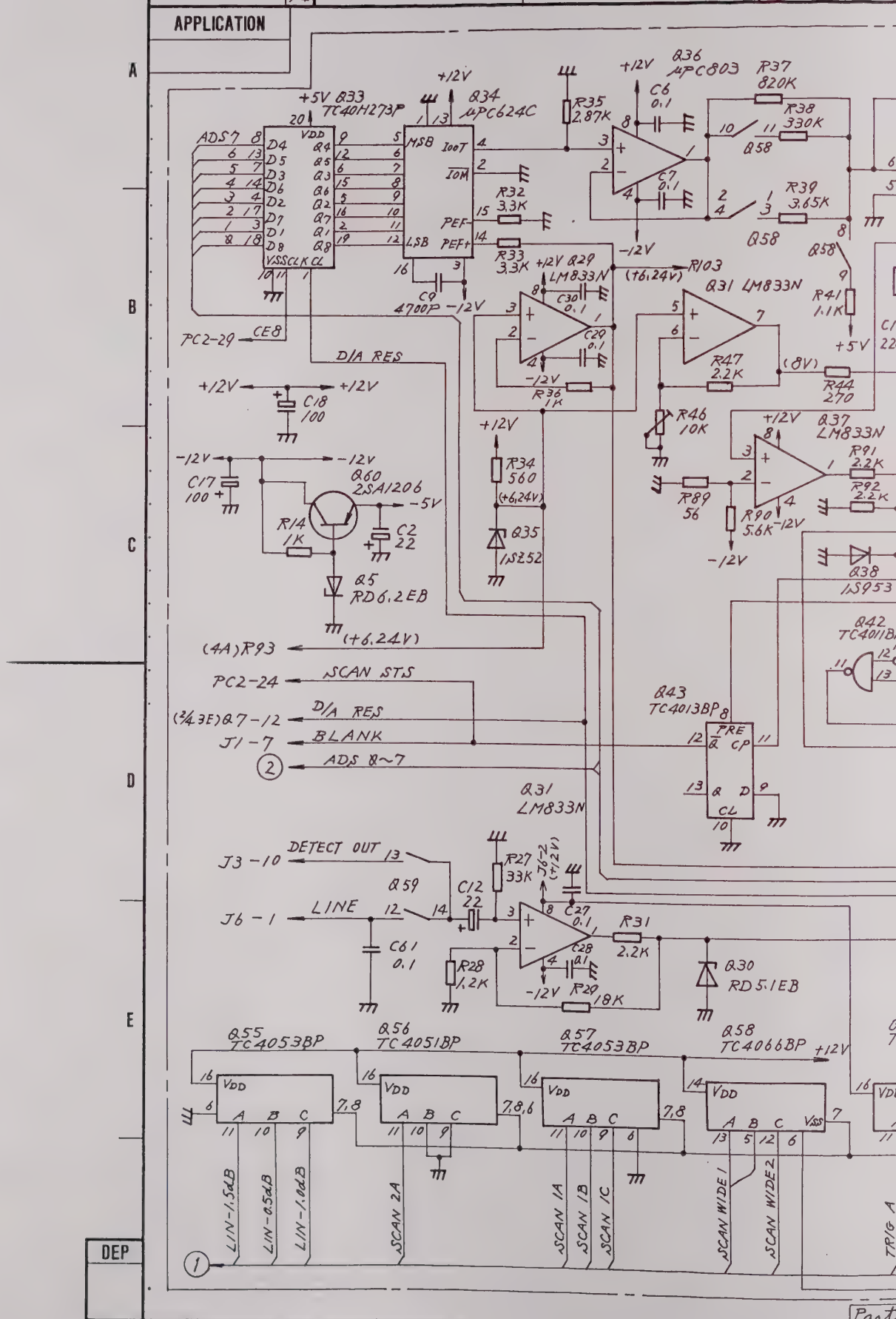

DATA BUS
ADDRESS BUS
CPU
8085A
ADDRESS
DECORDER
ROM
256K×8
RAM
(2K×8)
RAM
2K×6
I/O
INTERRUPTION



SCAN & CPU

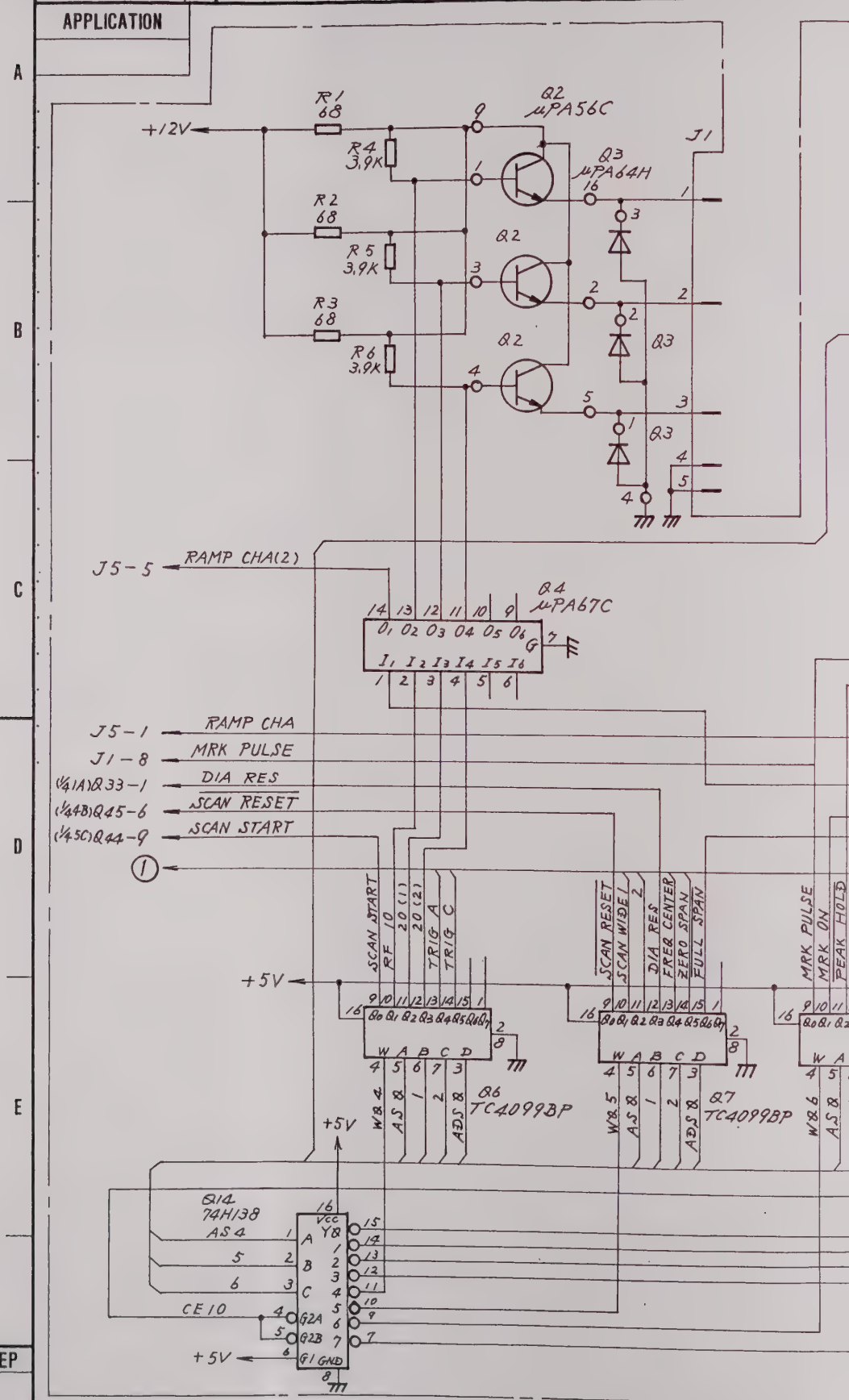
Block Diagram
(CPU)

APPLICATION

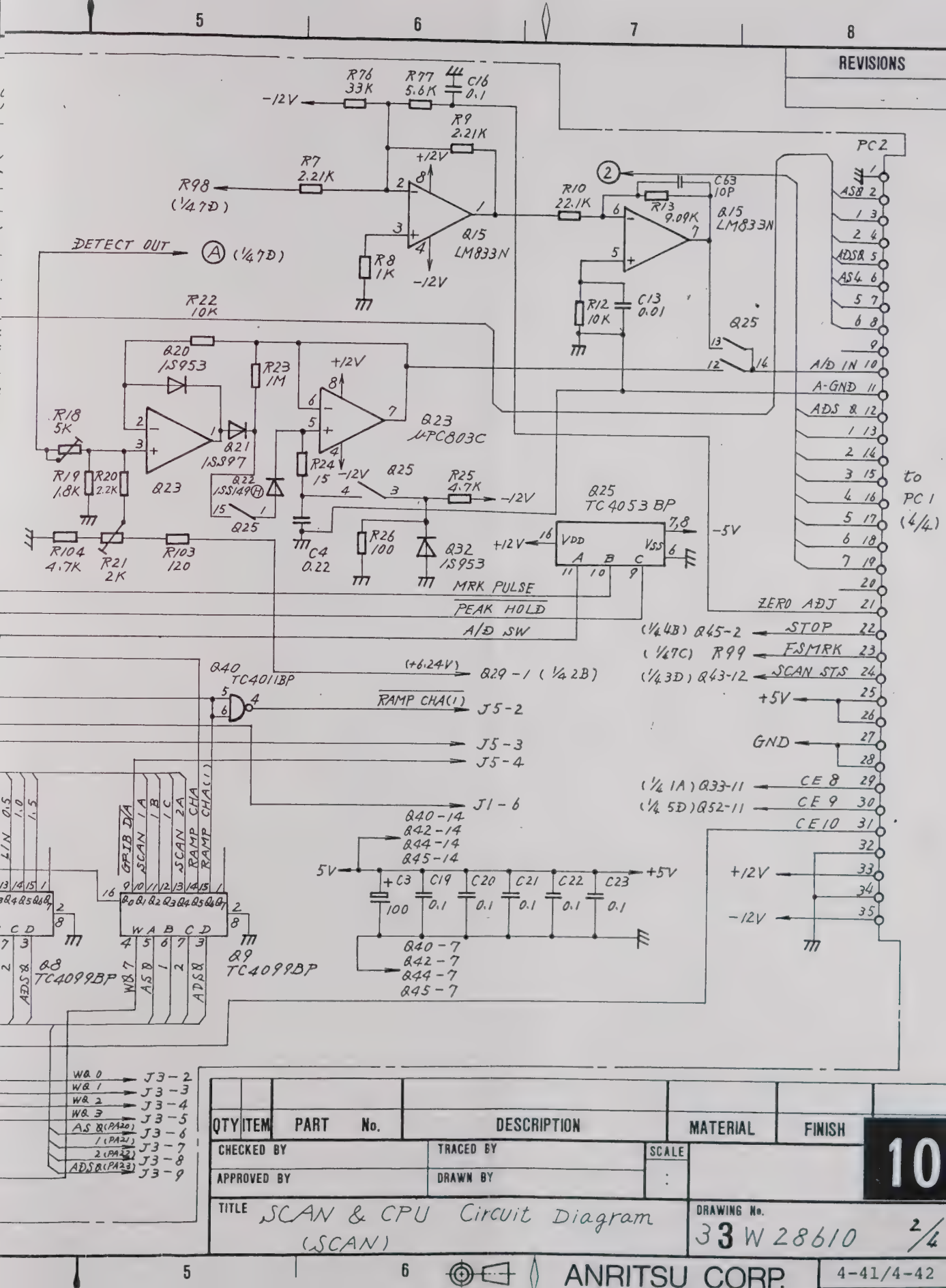


REVISIONS
Q35
(+6.24V)
(2C)
R93 6.8K
R94 2.2K
R50 5K
Q29 LM833N
R95 2.2K
(8V)
Q59
+12V
R79 1.2K
R56 470
R80 10K
R57 1K
C14 10P
C15 27P
X-AXIS
J1-11
Q48 LM833N
R81 6.8K
R82 1K
Q50 LM833N
Q50 LM833N
+12V
R105 10K
-12V
R78 5.6K
220
C24
+5V
Q39 μPC272C
R101 5.6K
R106 2.7K
R102 5.6K
+5V
R75 150
R55 2.2K
R52 2.2K
R53 1.8K
R54 2.2K
Q48 LM833N
R58 4.02K
R59 2K
R60 2K
R61 9.09K
R62 909
R63 90.9
R64 10.0
Q57
Q56
100K
1M
10M
10K
YTO RAMP
J7
Q45 TC4011BP
Q41 TC4013BP
Q44 TC4011BP
Q42 TC4011BP
Q43 RPE
SCAN RESET
STOP
PC2-22
(3/4 3E)
Q7-9
R107 560
R108 22K
R109 6.8K
R96 4.7K
R97 2.2K
R98 5K
Q37 LM833N
R99 2.2K
R100 2.2K
FSMRK
PC2-23
Q46 1S953
(3/4 5A)
R7
J5-9
R66 220
C5 0.01
Q40 TC4011BP
SCAN START
Q6-9
(3/4 2E)
R73 2.7K
Q53 μPC6240
C11 0.1
R69 4.7K
Q54 LM833N
Q54 LM833N
(3/4 5B)
A
YAXIS
J1-12
Q52 TC40H273P
ADS7
DIA RES
R70 1.2K
R71 75K
R72 3.3K
R74 75K
R84 1.2K
R85 3.3K
R86 3.9K
R87 5.6K
R88 12K
Q55
DETECT OUT
J3-12
R67 3.3K
R68 3.3K
C10 4700P
-12V
-5V
TRIG.C(FREE RUN)
PC2-30
CE9
ZERO SPAN
FREQ CENTER
List 34W90631
QTY ITEM PART No. DESCRIPTION MATERIAL FINISH
CHECKED BY
TRACED BY
SCALE
APPROVED BY
DRAWN BY
TITLE SCAN & CPU Circuit Diagram (SCAN)
DRAWING No. 33W28610
10
1/4
ANRITSU CORP.
4-39/4-40

APPLICATION

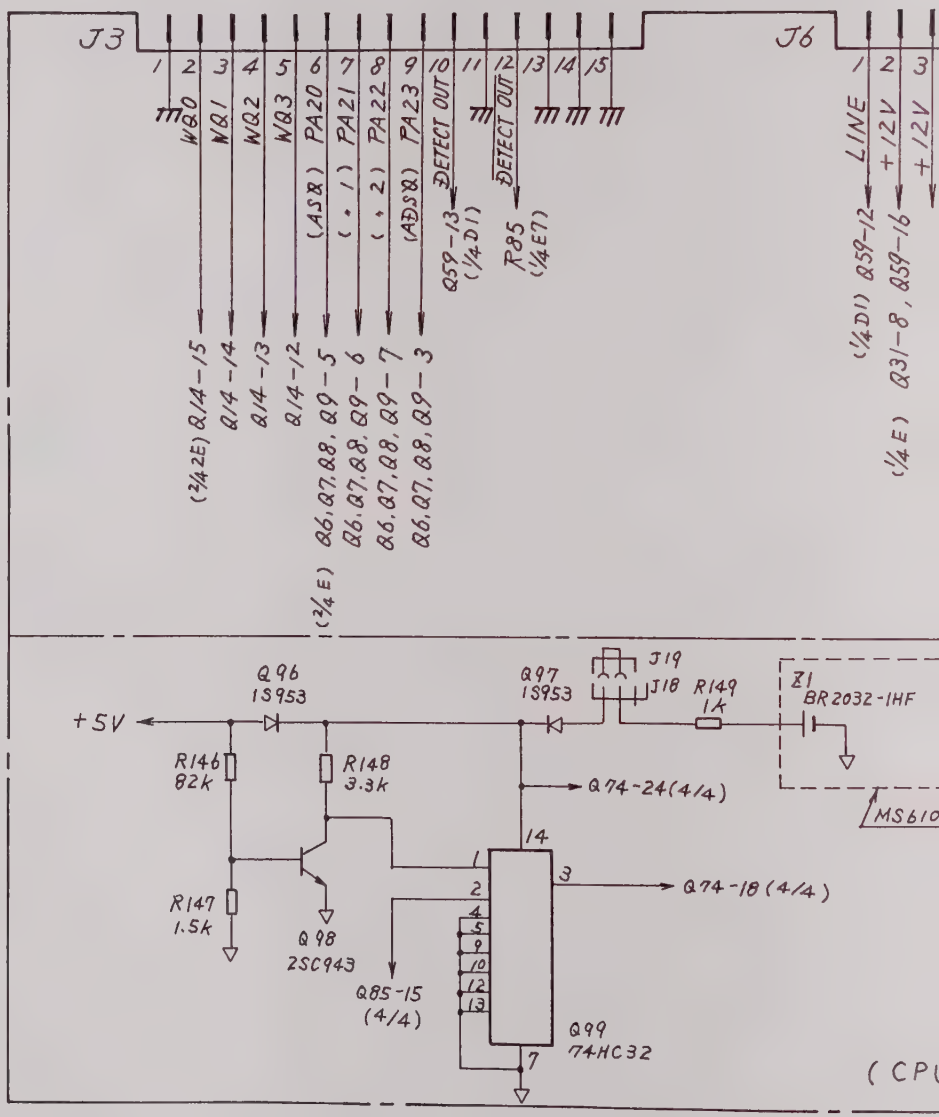


DEP


REVISIONS
R76 33K
R77 5.6K
C16 0.1
-12V
R9 2.21K
+12V
R7 2.21K
R98 (1/47D)
Q15 LM833N
R8 1K
DETECT OUT
(A) (1/47D)
R10 22.1K
C63 10P
R13 9.09K
Q15 LM833N
R12 10K
C13 0.01
R22 10K
Q25
PC2
A/D IN
A-GND
ADS
to PC1 (4/4)
Q20 1S953
R23 1M
Q21 1SS97
Q23 μPC803C
R18 5K
R19 1.8K
R20 2.2K
Q23
Q22 1SS149
R24 15
R25 4.7K
Q25 TC4053BP
R104 4.7K
R21 2K
R103 120
C4 0.22
R26 100
Q32 1S953
MRK PULSE
PEAK HOLD
A/D SW
ZERO ADJ
STOP
FSMRK
SCAN STS
+5V
GND
CE 8
CE 9
CE10
Q40 TC4011BP
(+6.24V) Q29-1 (1/42B)
RAMP CHA(1)
J5-2
J5-3
J5-4
J1-6
Q40-14
Q42-14
Q44-14
Q45-14
C3 100
C19 0.1
C20 0.1
C21 0.1
C22 0.1
C23 0.1
Q40-7
Q42-7
Q44-7
Q45-7
Q8 TC4099BP
Q9 TC4099BP
GP-IB D/A
SCAN 1A
SCAN 1B
SCAN 1C
SCAN 2A
RAMP CHA
RAMP CHA(1)
WR 0
WR 1
WR 2
WR 3
AS
ADS
J3-2
J3-3
J3-4
J3-5
J3-6
J3-7
J3-8
J3-9
QTY ITEM PART No. DESCRIPTION MATERIAL FINISH
CHECKED BY
TRACED BY
SCALE
APPROVED BY
DRAWN BY
TITLE SCAN & CPU Circuit Diagram (SCAN)
DRAWING No. 33W28610
10
2/4
ANRITSU CORP.
4-41/4-42

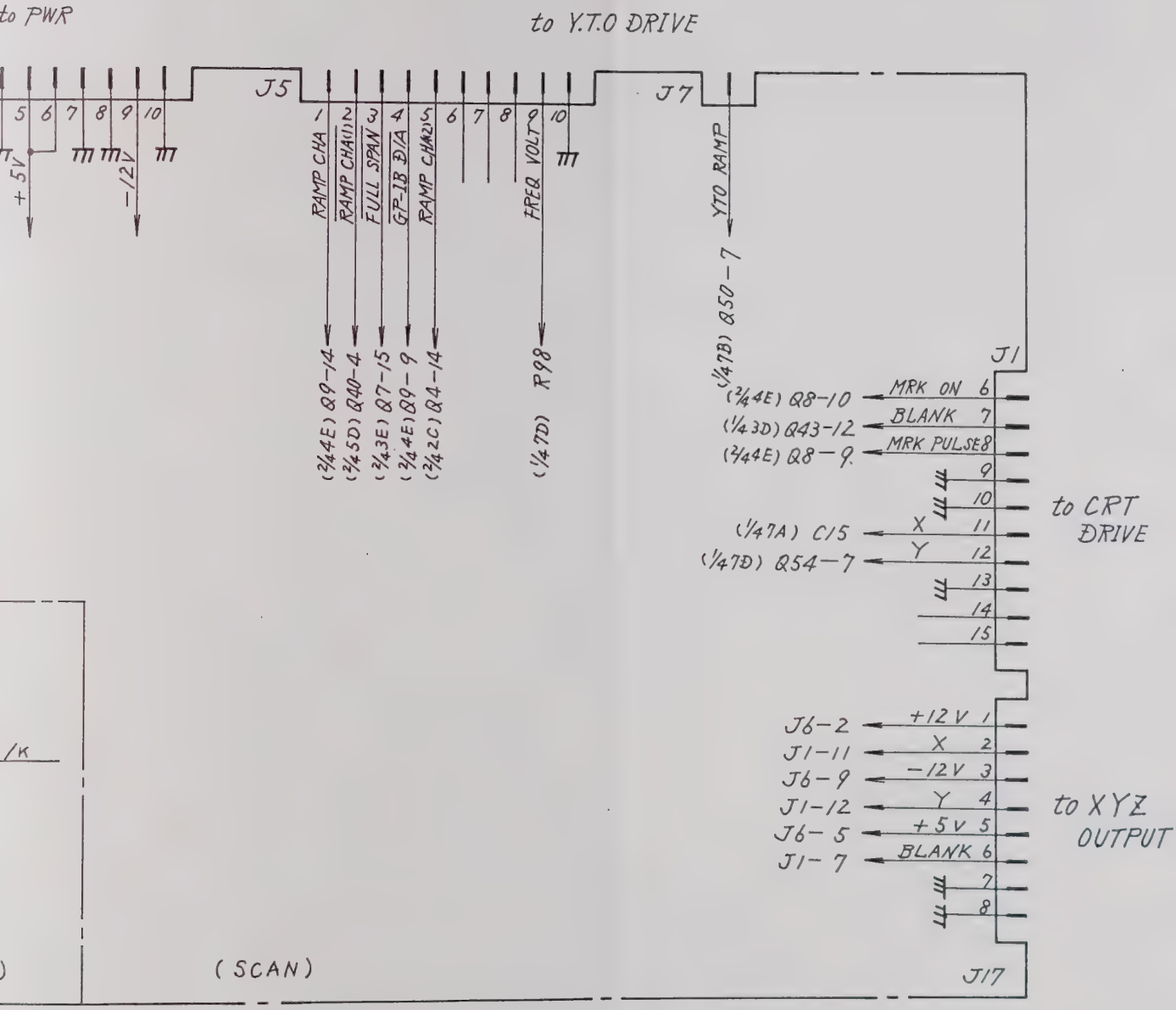
APPLICATION

to IF



DEP

REVISIONS



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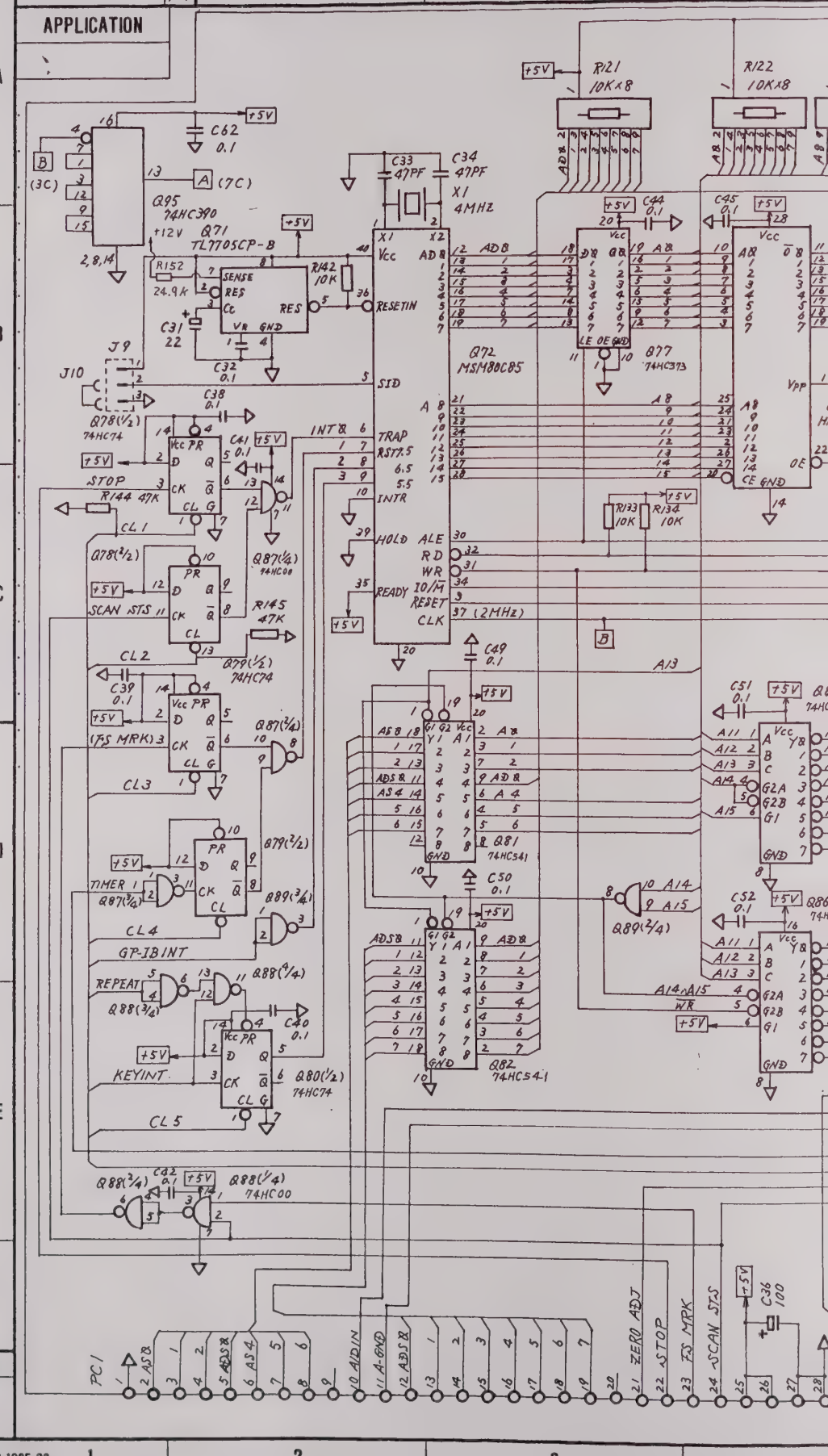
APPROVED BY	DRAWN BY	

TITLE SCAN & CPU Circuit Diagram (SCAN)

DRAWING No. 33W28610 3/4

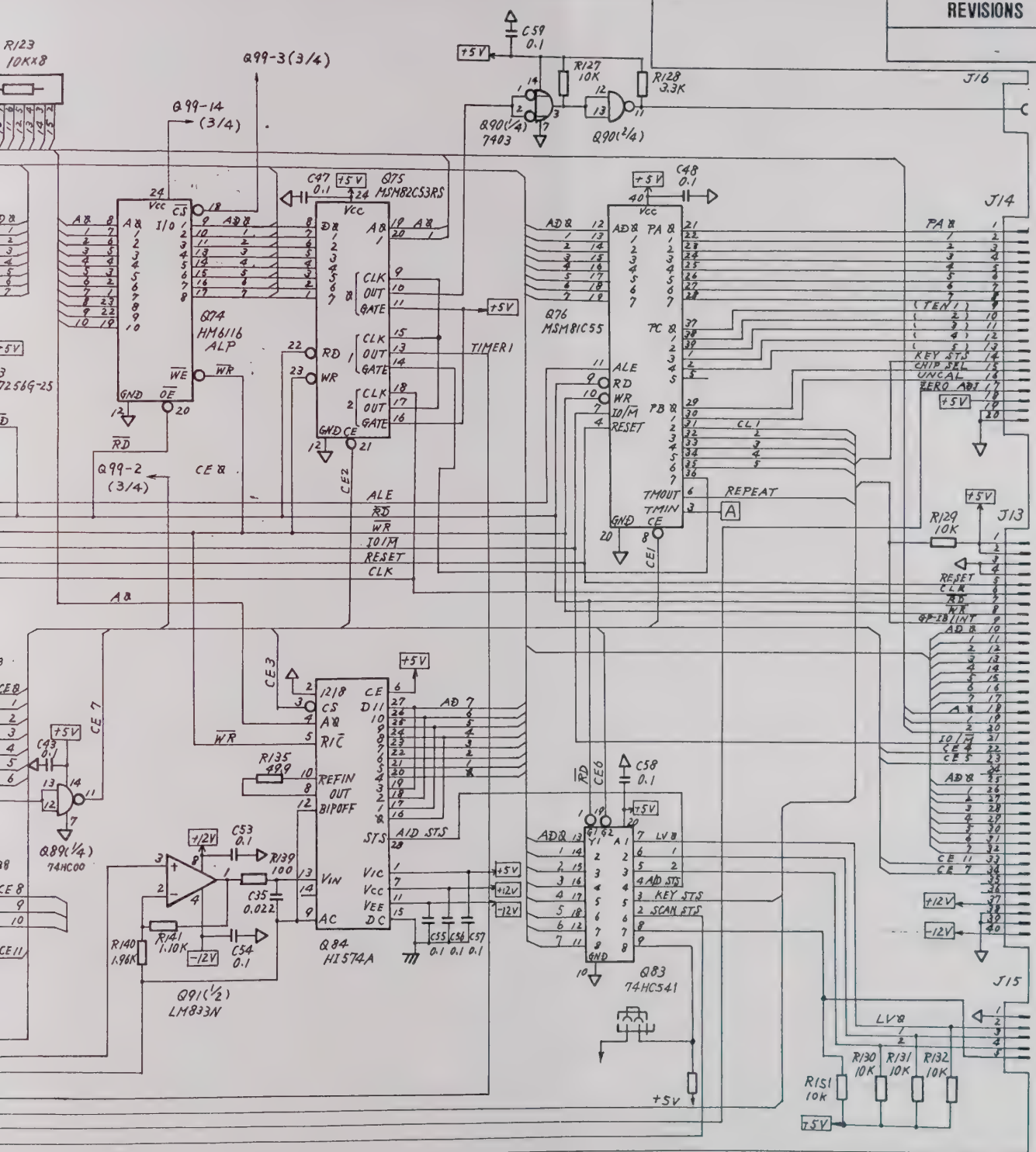
10

APPLICATION



DEP

REVISIONS



QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH

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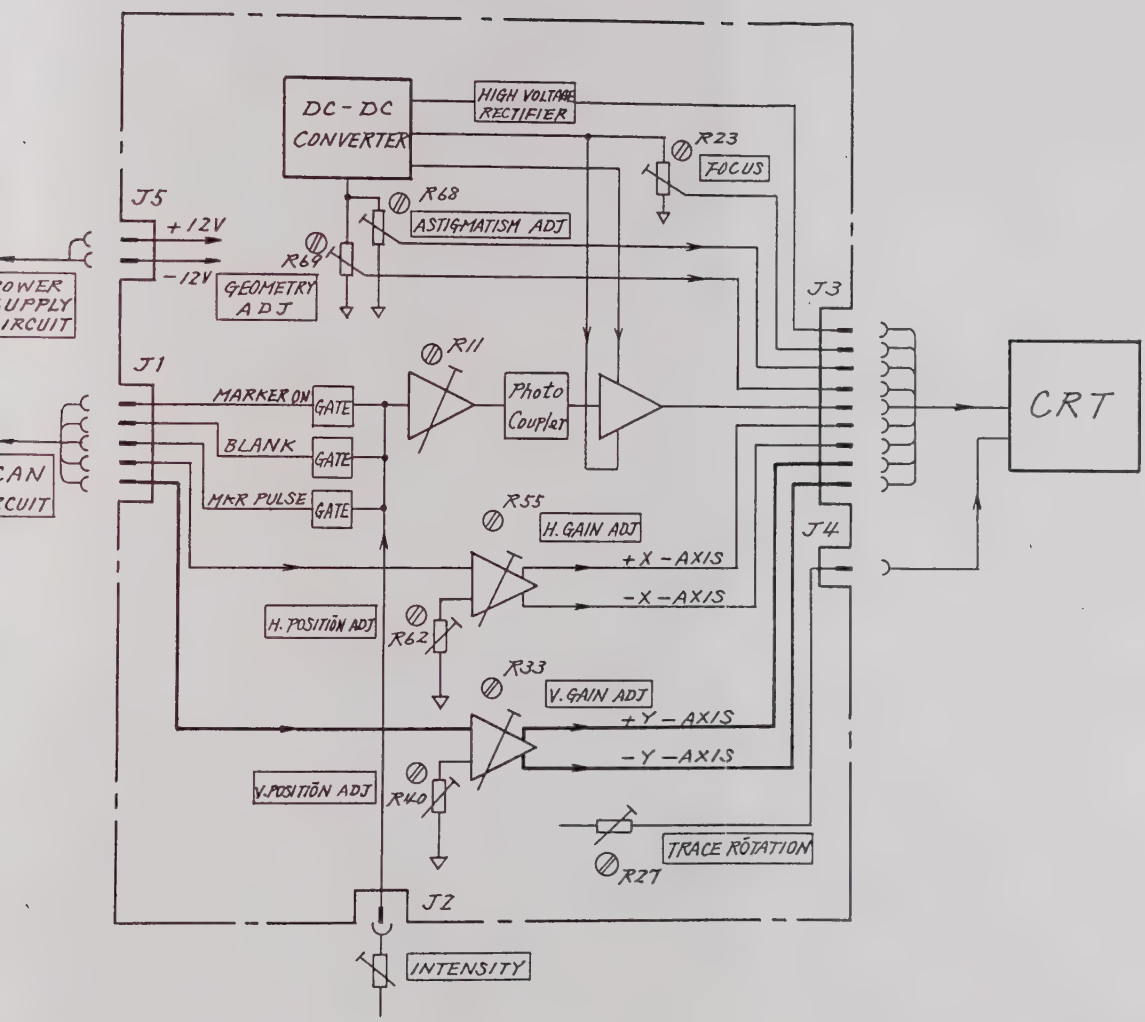
APPROVED BY	DRAWN BY	:

TITLE SCAN & CPU Circuit Diagram (CPU)

DRAWING No. 33W28610 4/4

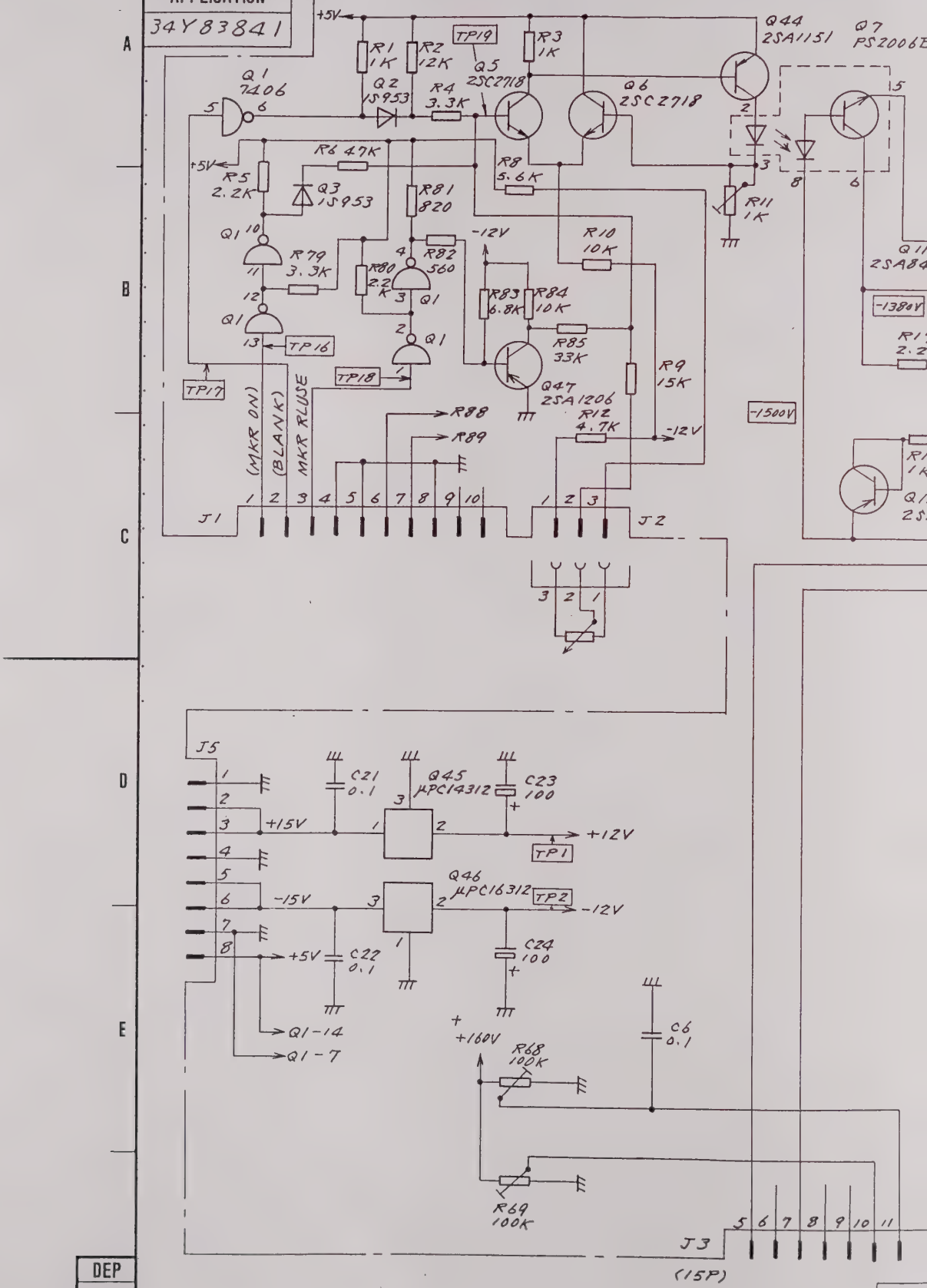
10



CRT DRIVE
Block Diagram

11

APPLICATION
34Y83841



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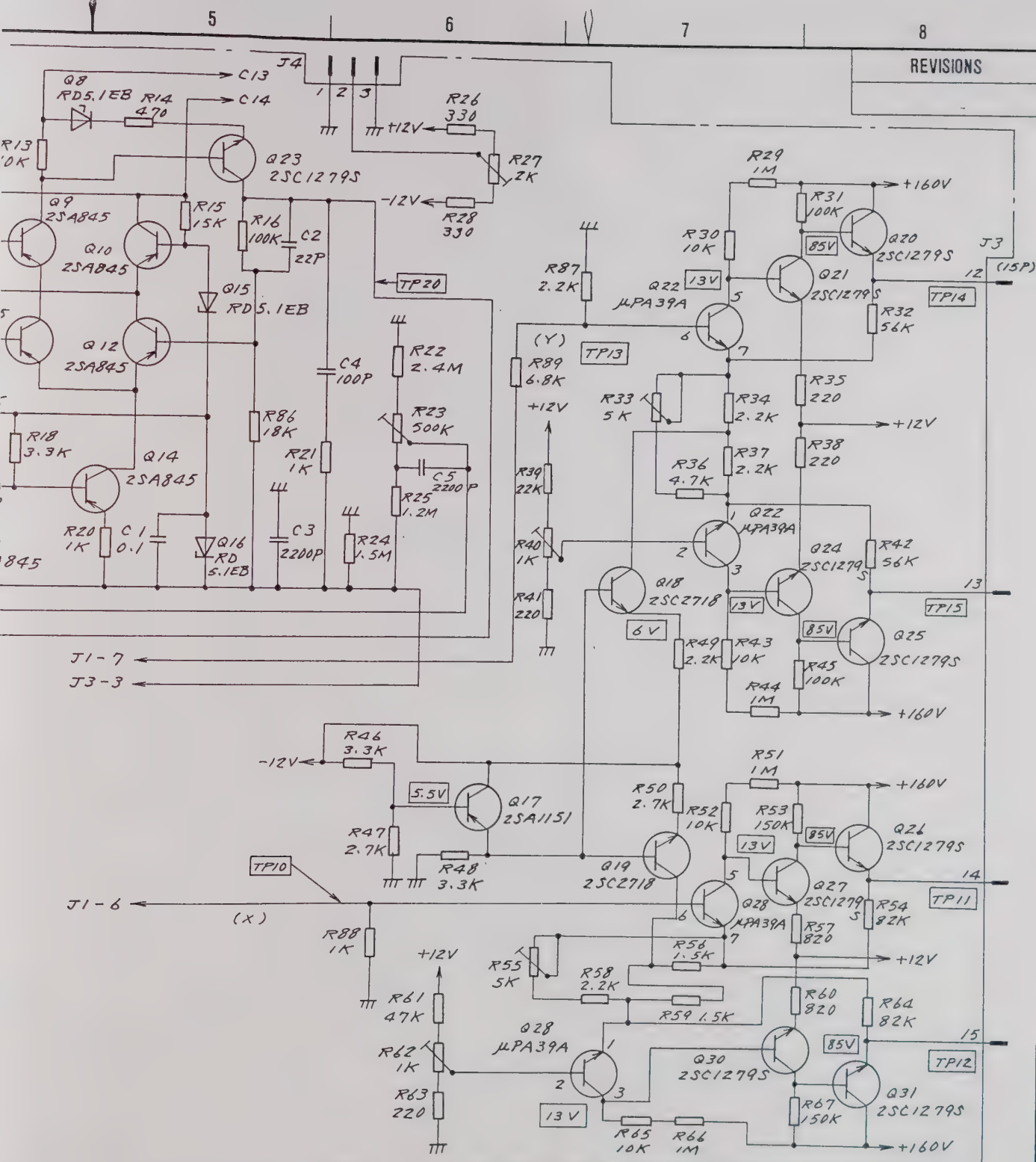


QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH

CHECKED BY	TRACED BY	SCALE	
APPROVED BY	DRAWN BY	:	

332U25790

12

List 34W85994

TITLE: CRT DRIVE Circuit Diagram

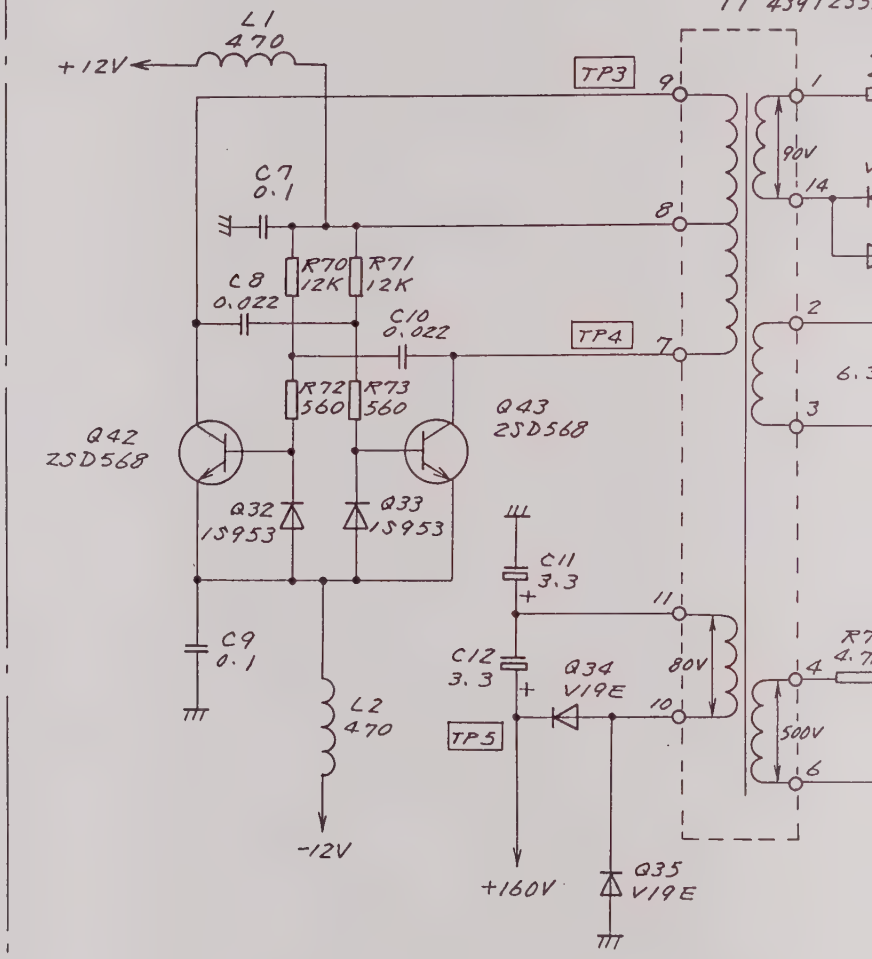
DRAWING No. 33W26568 1/2

ANRITSU CORP.

4-49/4-50

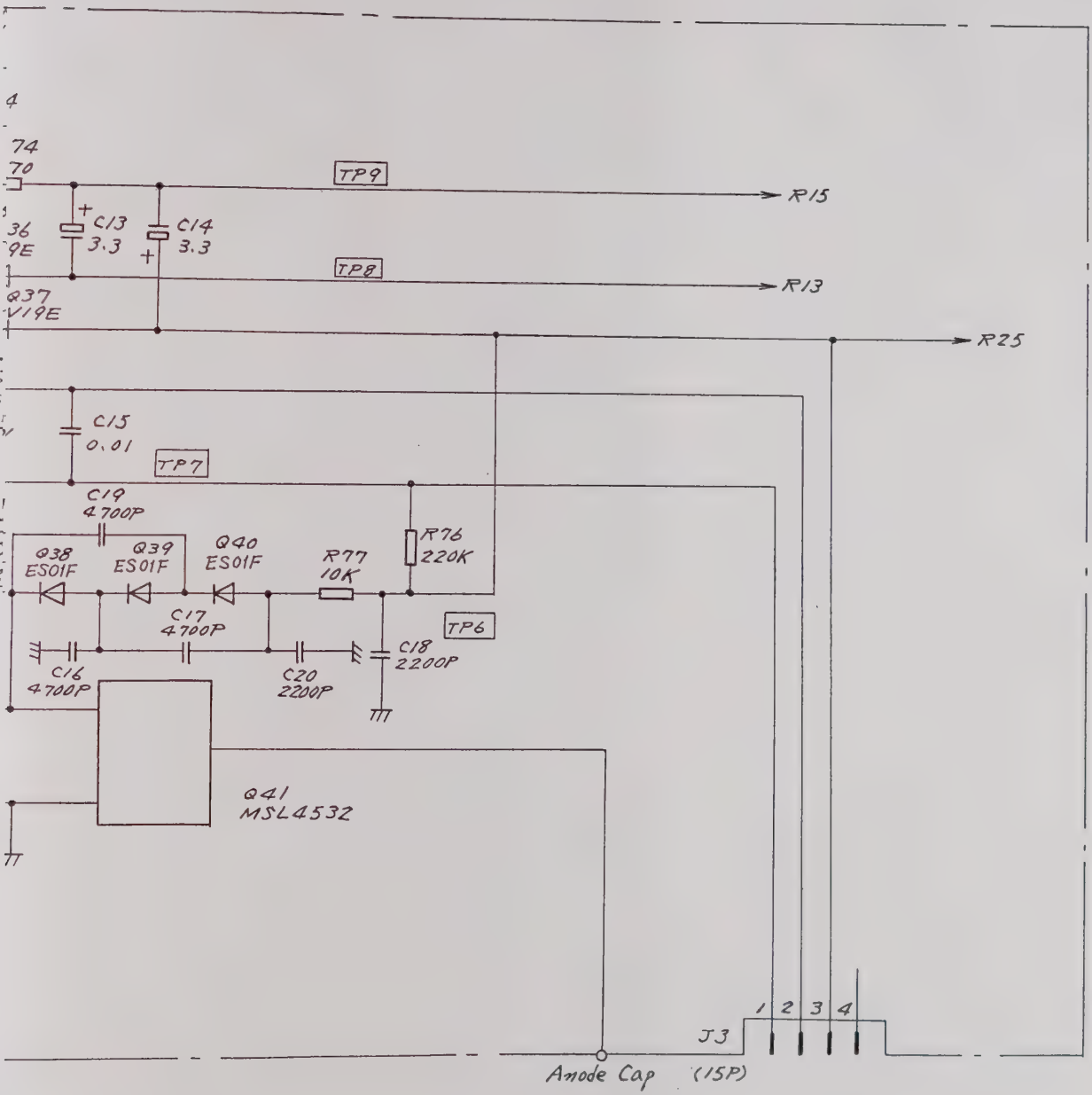
APPLICATION

34Y83841



DEP

REVISIONS



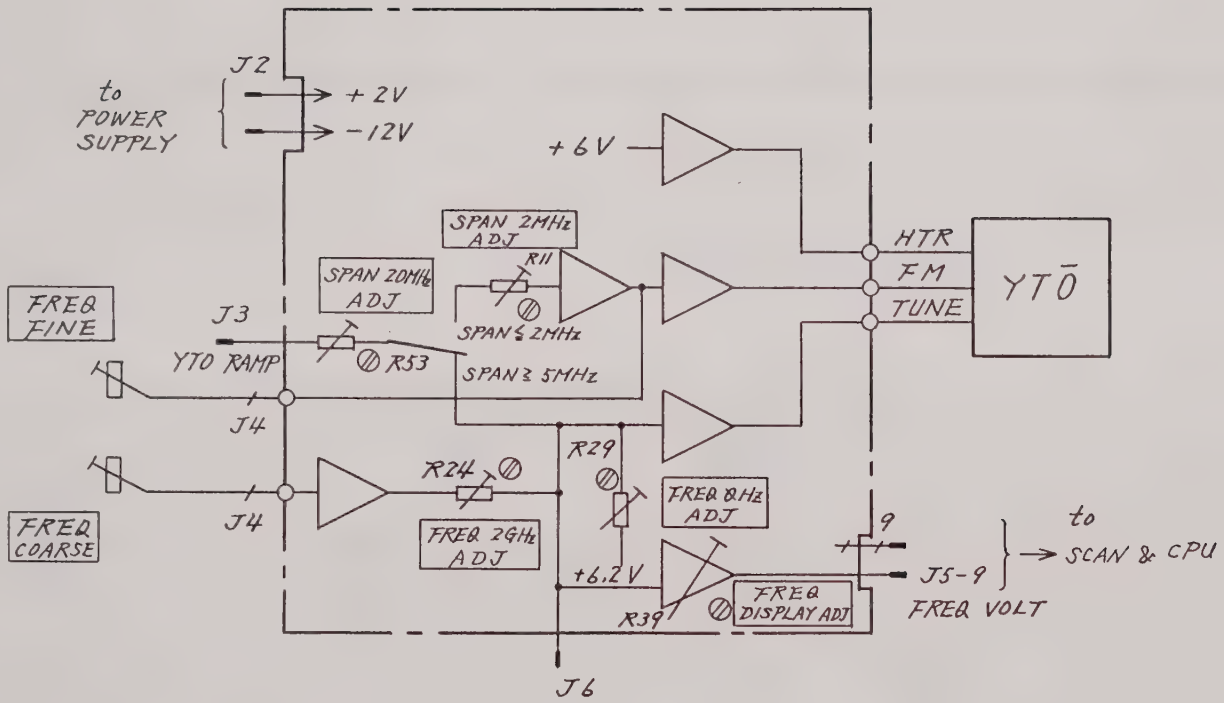
QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH

CHECKED BY	TRACED BY	SCALE :
APPROVED BY	DRAWN BY	

TITLE: CRT DRIVE Circuit Diagram

DRAWING No. 33WZ6568 2/2

12



13

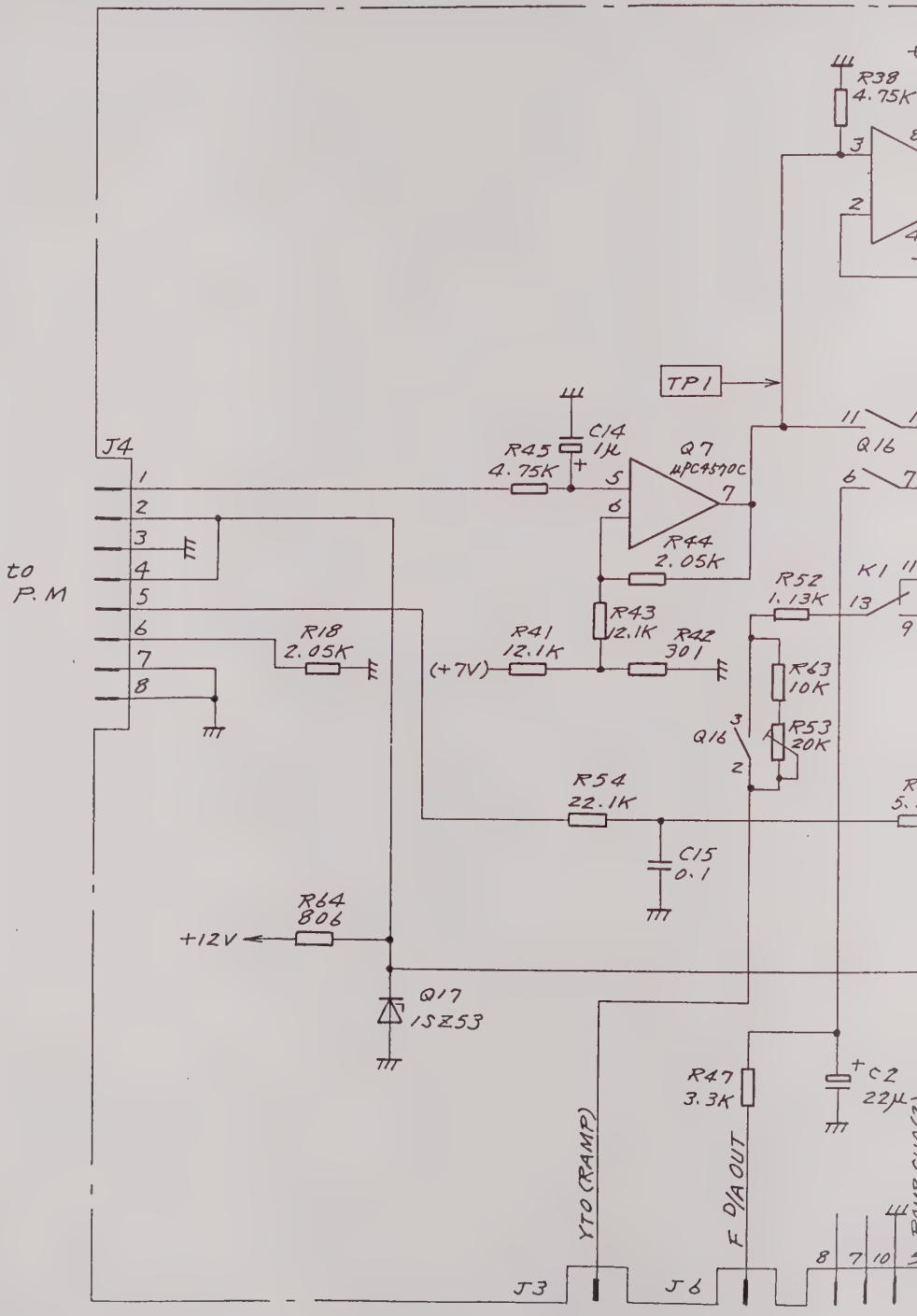
YTO DRIVE

Block Diagram

33W26569 1/2

APPLICATION

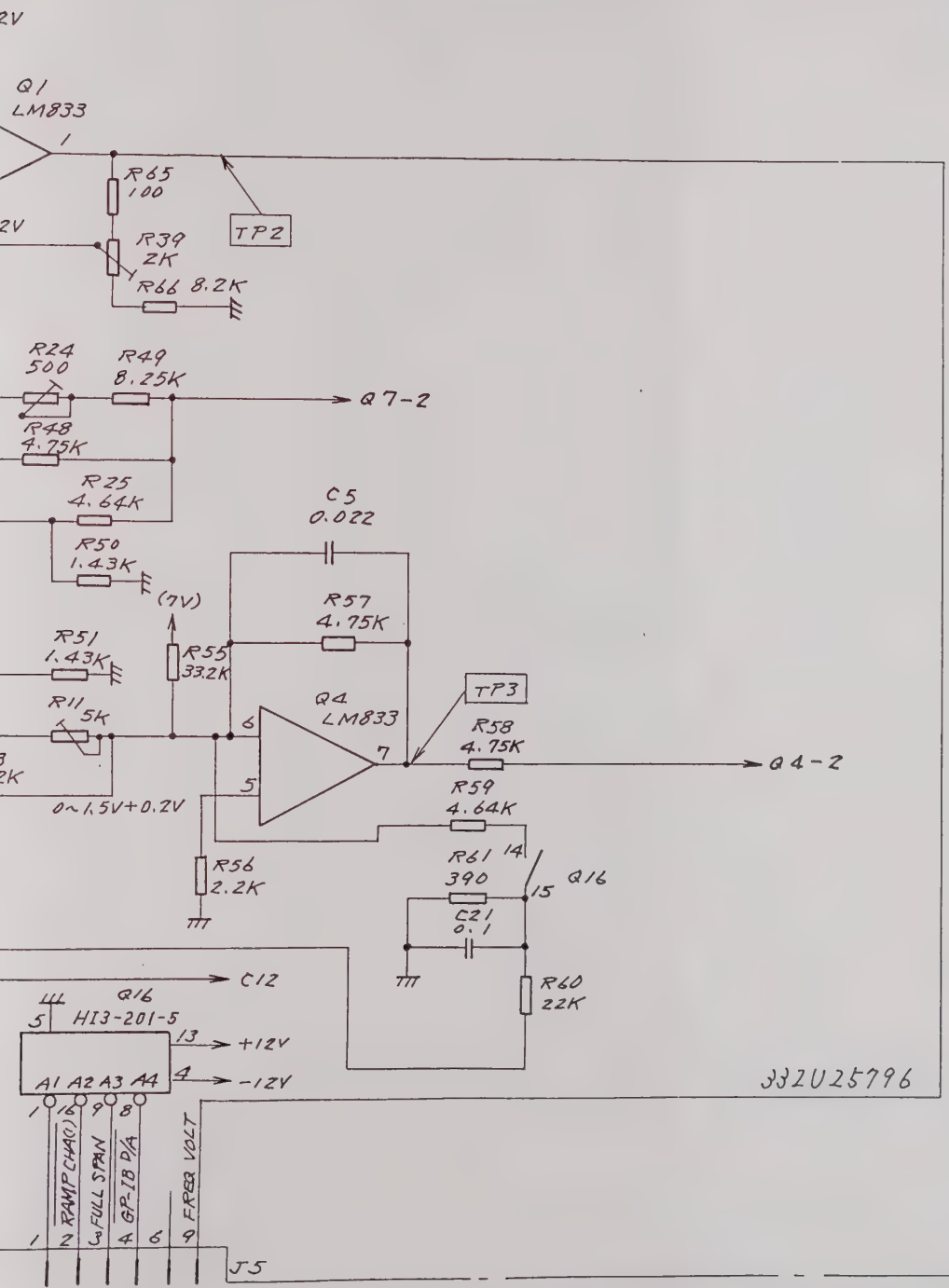
34Y83848



DEP

Parts L

REVISIONS



332U25796

QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH

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APPROVED BY	DRAWN BY	: M-1	

TITLE: YTO DRIVE Circuit Diagram

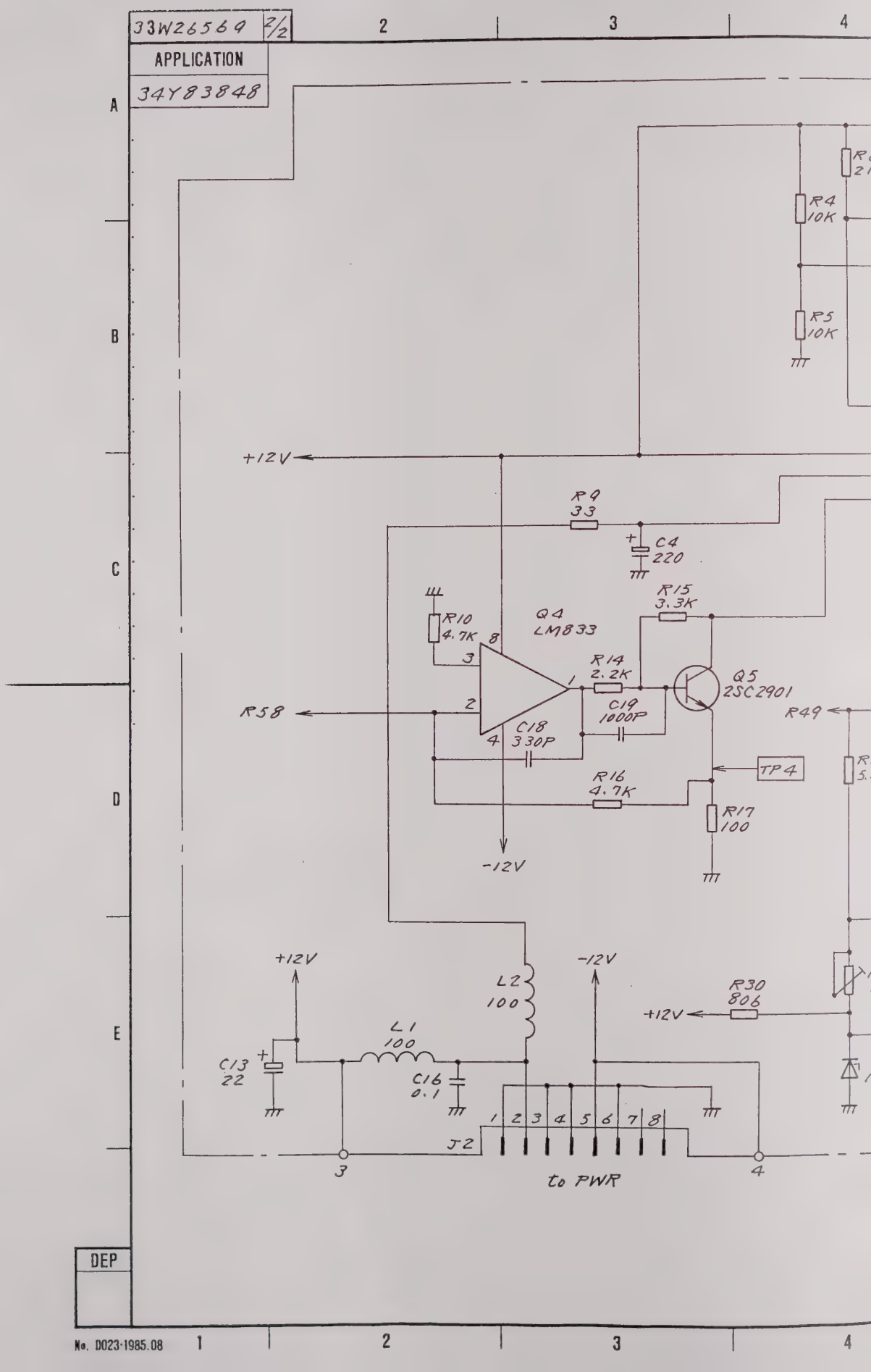
DRAWING No. 33W26569 1/2

st | 34W85995

33W26569 2/2

APPLICATION

34Y83848



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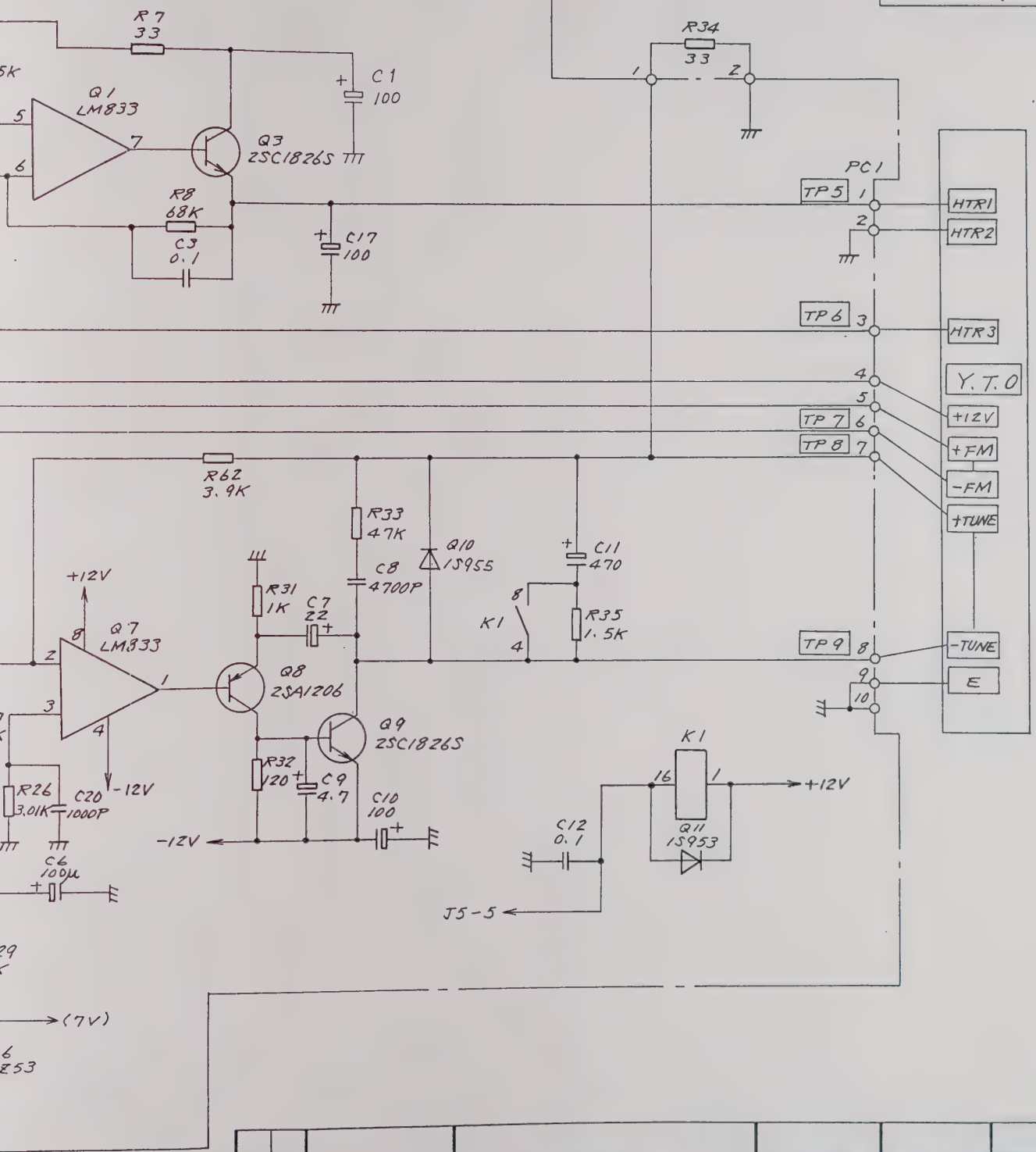
REVISIONS

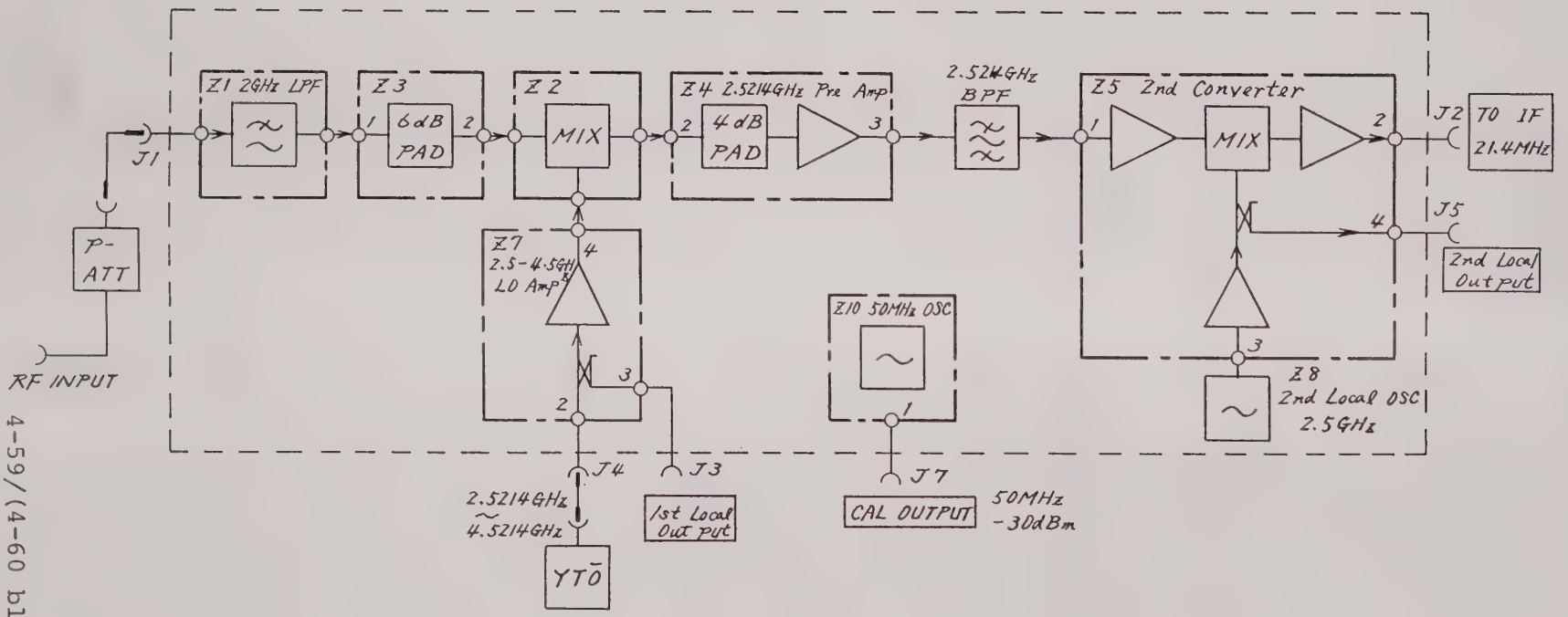


QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH

CHECKED BY	TRACED BY	SCALE	14
APPROVED BY	DRAWN BY	: M-1	

TITLE: YTO DRIVE Circuit Diagram

DRAWING No. 33W26569 2/2

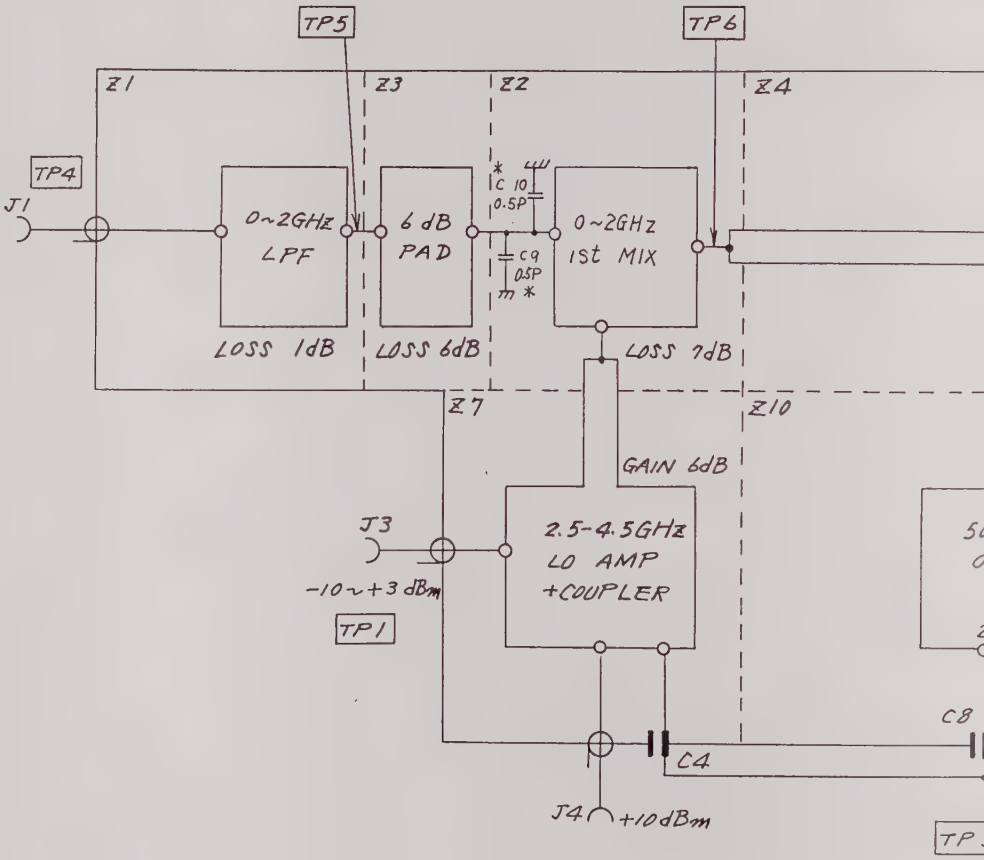


RF Block Block Diagram

33W26562 1/1

APPLICATION

34Y83846

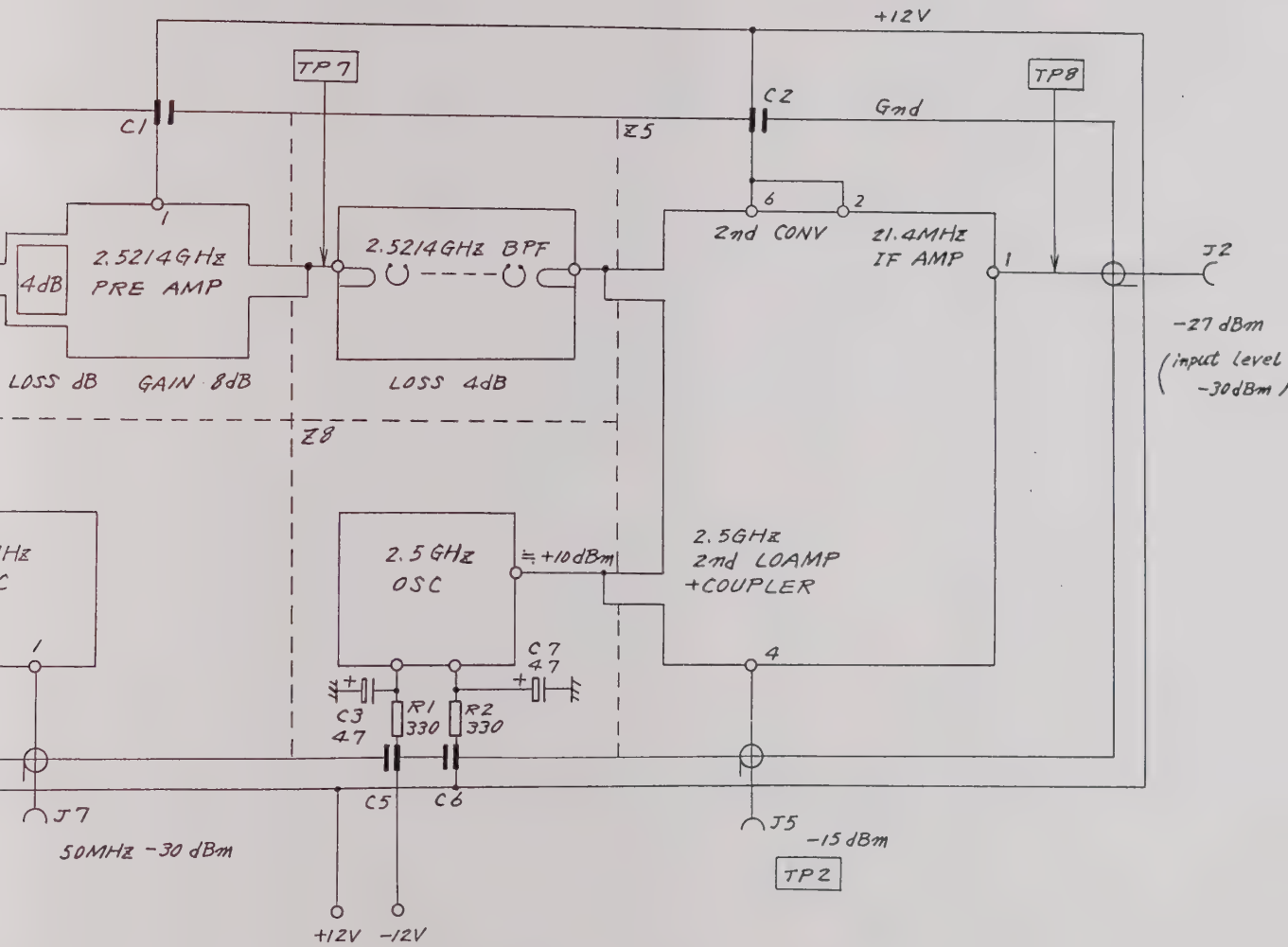


Parts List 34W85987

*Note: C9 and C10 are built only into the MS610A for adjustment use.

DEP

REVISIONS



QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH

CHECKED BY	TRACED BY	SCALE :
APPROVED BY	DRAWN BY	

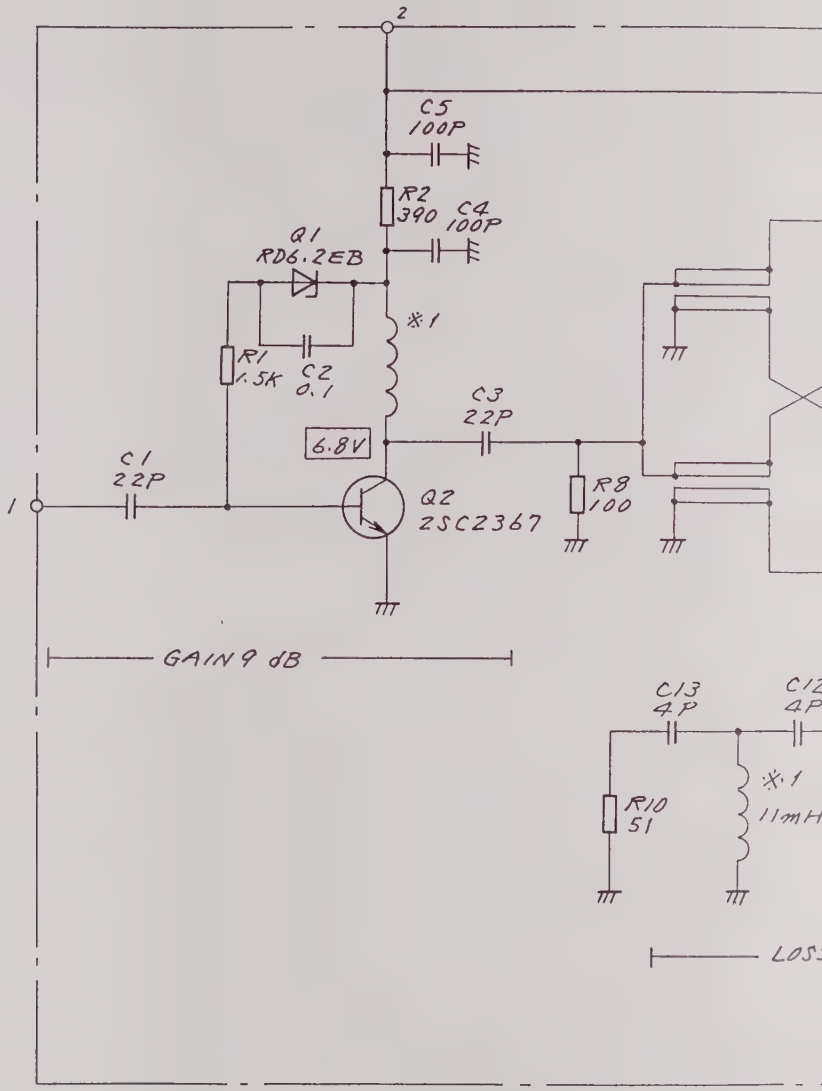
TITLE: RF CONV Circuit Diagram

DRAWING No. 33W26562 1/1

16

APPLICATION

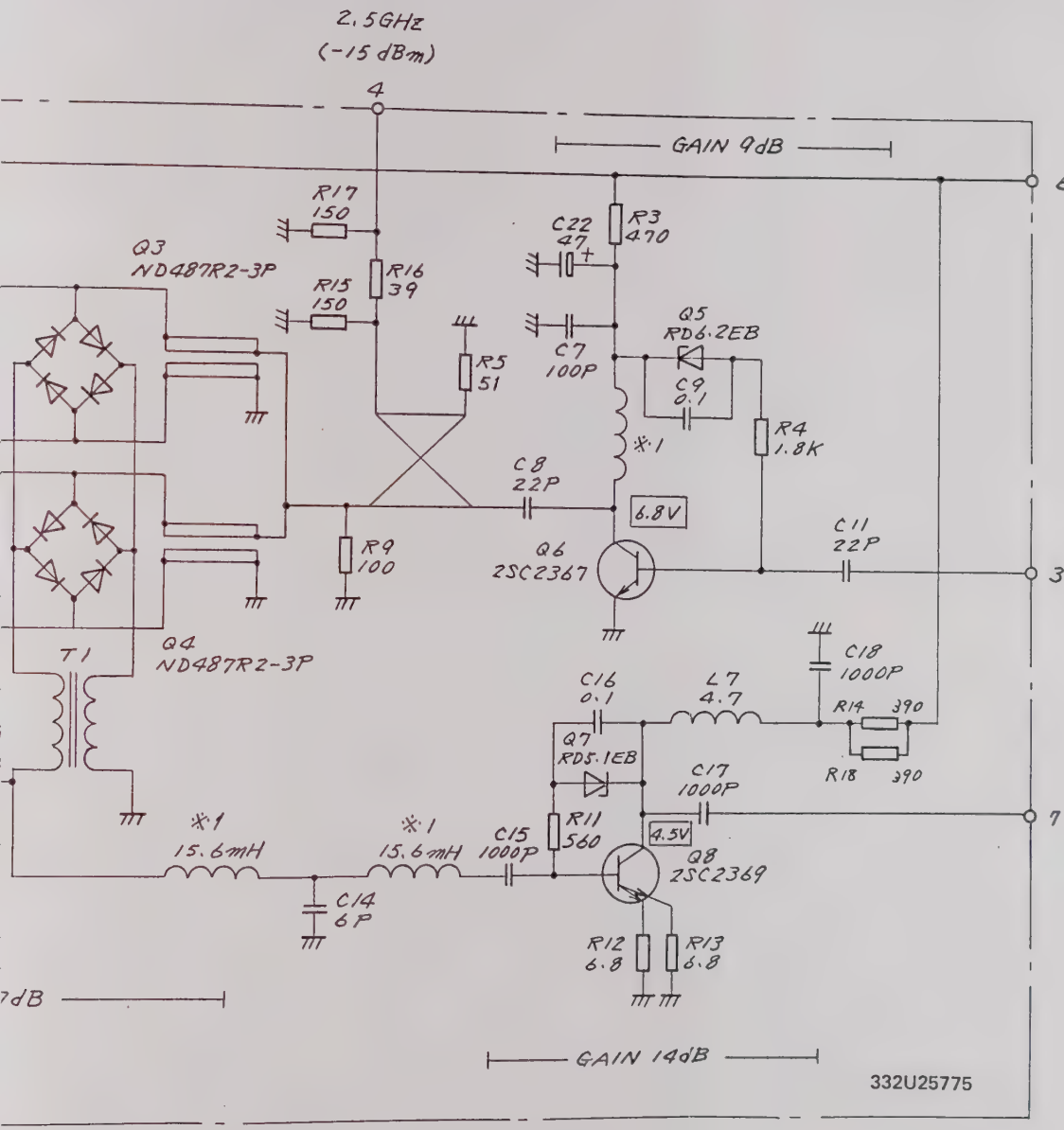
34Y83846



DEP

Parts

REVISIONS



※1 Printed Coil Pattern

QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH

CHECKED BY	TRACED BY	SCALE	
APPROVED BY	DRAWN BY	:	

17

.ist 34W89581

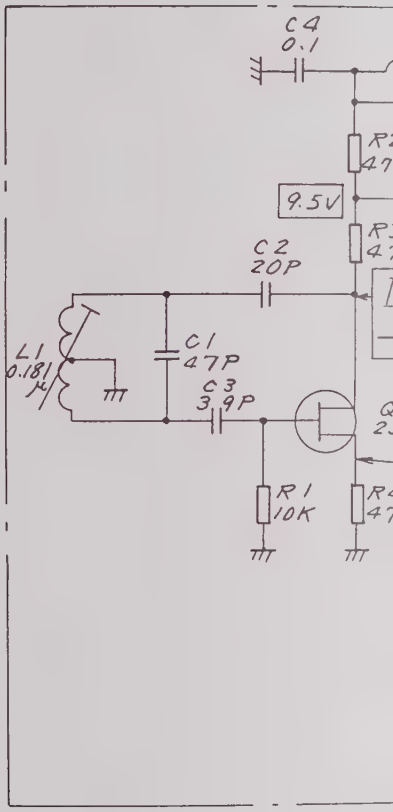
TITLE 2nd Converter Circuit Diagram

DRAWING No. 33W28092 1/1

33W26564 1/1

APPLICATION

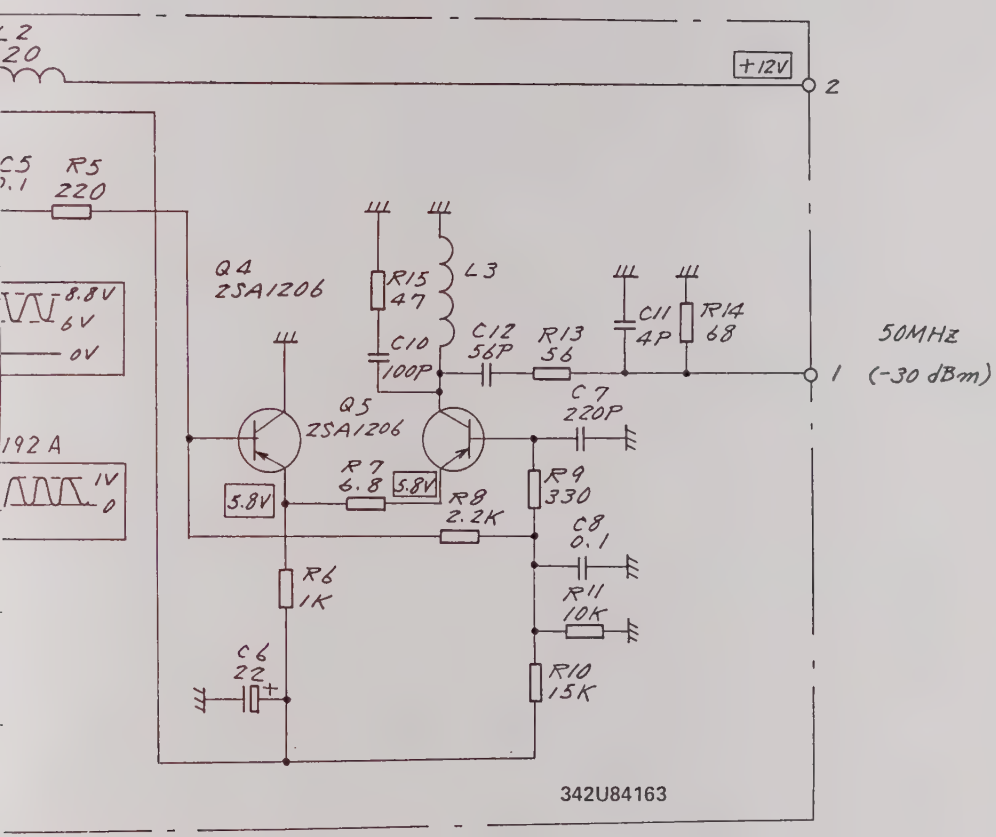
34Y83846



Parts List 3

DEP

REVISIONS



185990

QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH

CHECKED BY	TRACED BY	SCALE	
APPROVED BY	DRAWN BY	:	

TITLE: 50MHz OSC Circuit Diagram

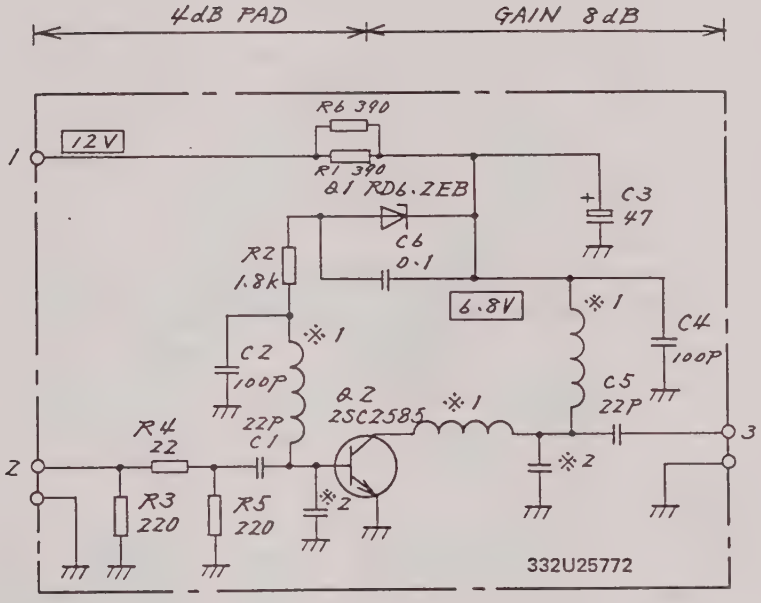
DRAWING No. 33W26564

ANRITSU CORP.

4-65/4-6

34W87923 1/1

APPLICATION	REVISIONS
34Y83859	



※1 Printed Coil Pattern

※2 Printed Condenser Pattern

Parts List	34W89578

QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH

CHECKED BY	TRACED BY	SCALE
APPROVED BY	DRAWN BY	:

19

DEP

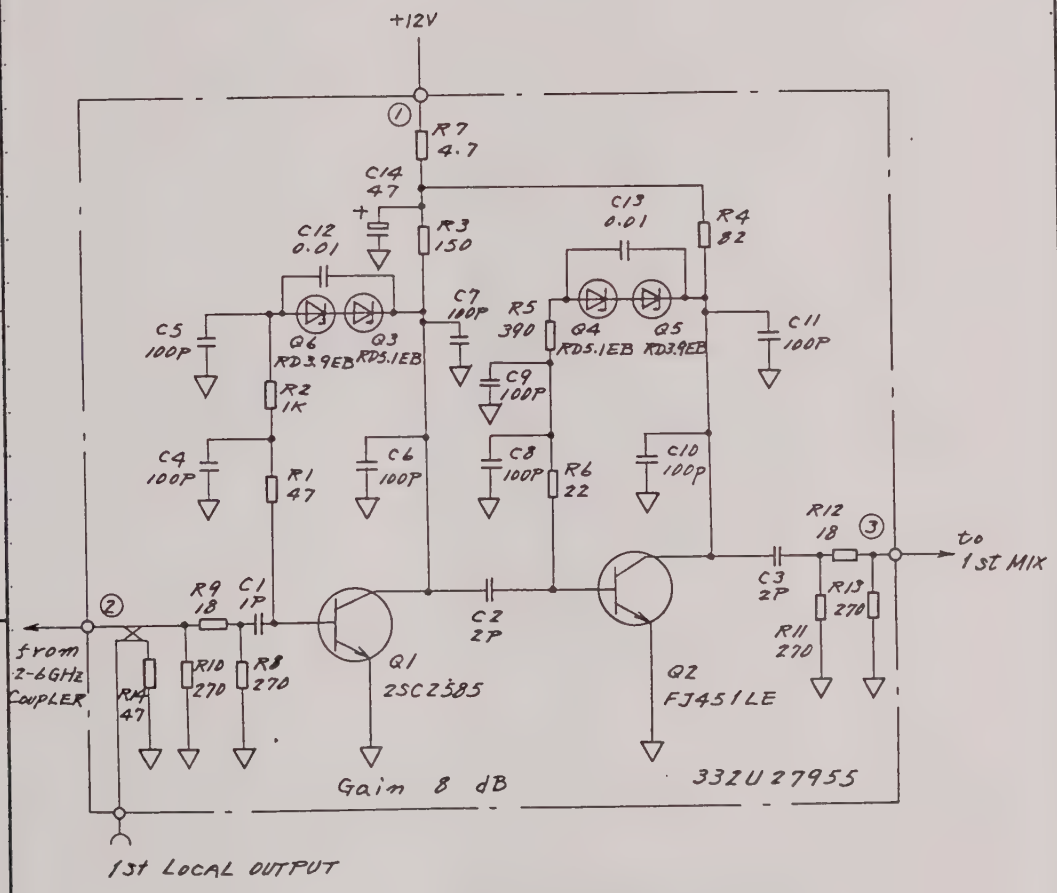
TITLE 2.5214 GHz PRE AMP Circuit Diagram

DRAWING No. 34W89579 1/1

34W89427 1/1

APPLICATION

REVISIONS



Parts List 34W89426

20

QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH	NOTE

CHECKED BY	TRACED BY	SCALE :
APPROVED BY	DRAWN BY	

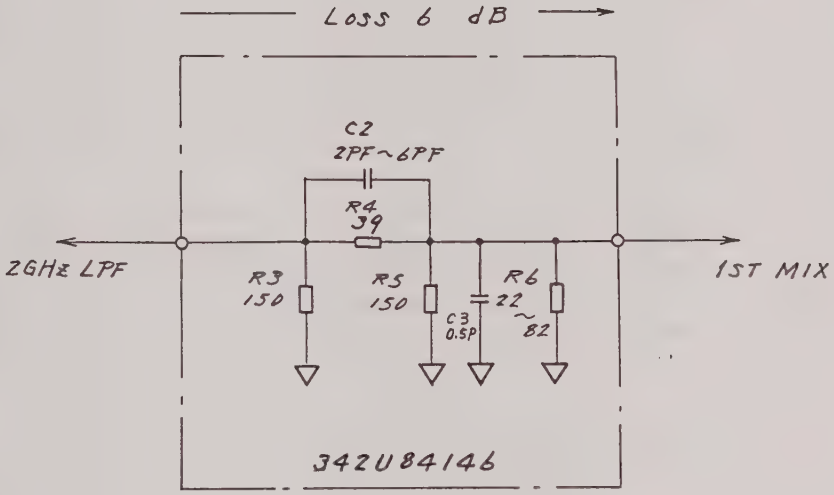
DEP

TITLE 2.5-4.5 GHz LO-AMP Circuit Diagram

DRAWING No. 34W89427 1/1

34W89429 1/1

APPLICATION	REVISIONS



Parts List	34W89428

21

QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH	NOTE

CHECKED BY	TRACED BY	SCALE
APPROVED BY	DRAWN BY	:

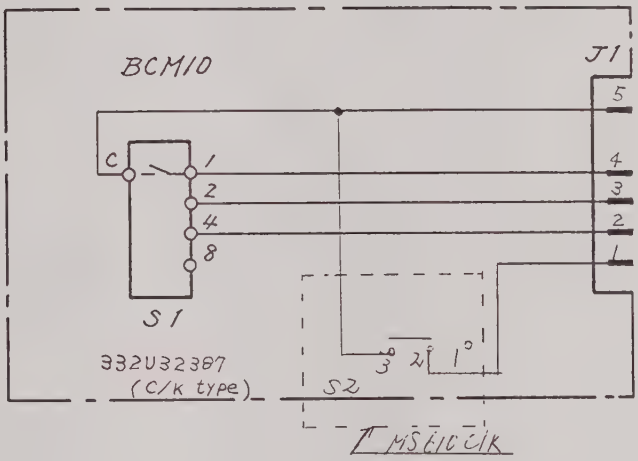
DEP

TITLE: 6dB PAD Circuit Diagram

DRAWING No. 34W89429 1/1

34W85998 1/1

APPLICATION	REVISIONS
34Y86001	



Parts List	34W86018

QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH

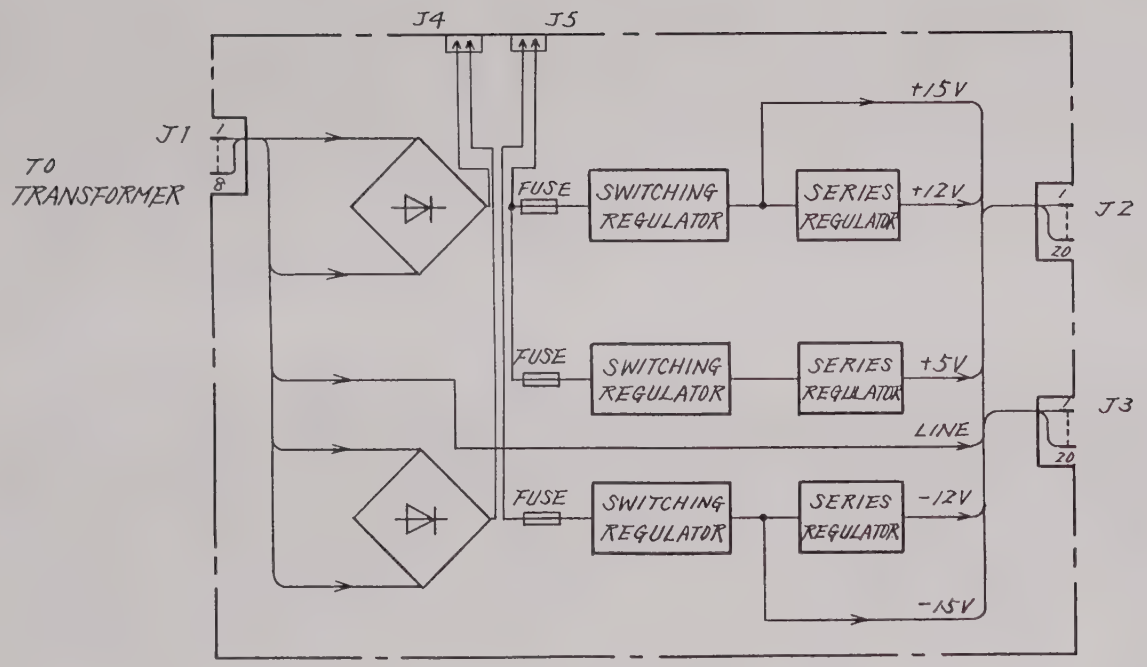
CHECKED BY	TRACED BY	SCALE
APPROVED BY	DRAWN BY	: M-1

22

DEP

TITLE: DIGITAL SW Circuit Diagram

DRAWING No. 34W85998 1/1



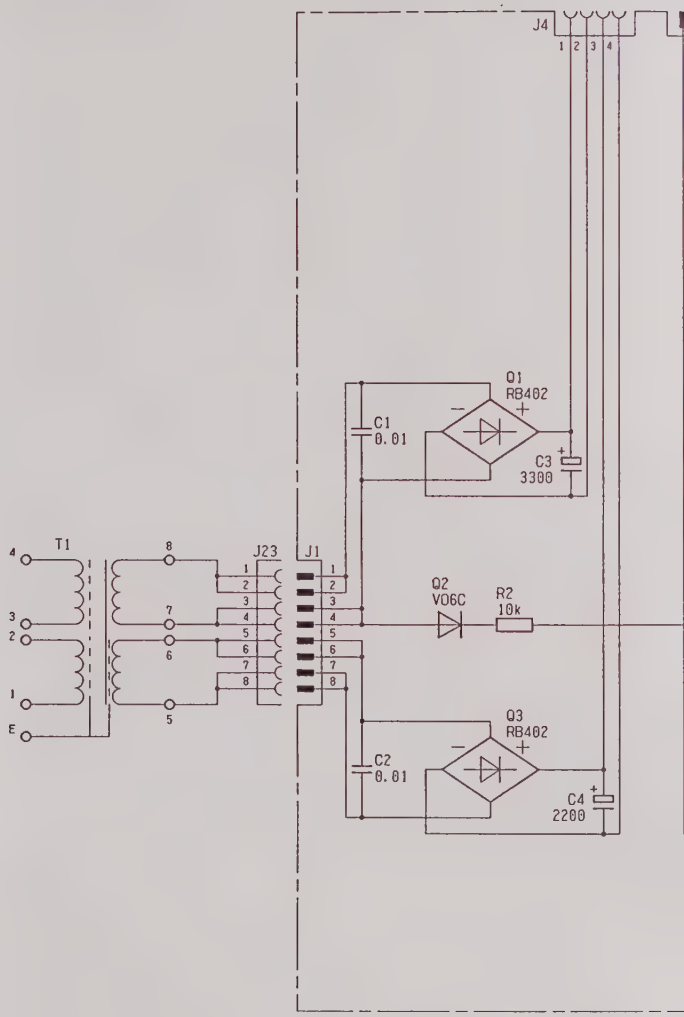
POWER SUPPY
Block Diagram.

4-71/(4-72 blank)

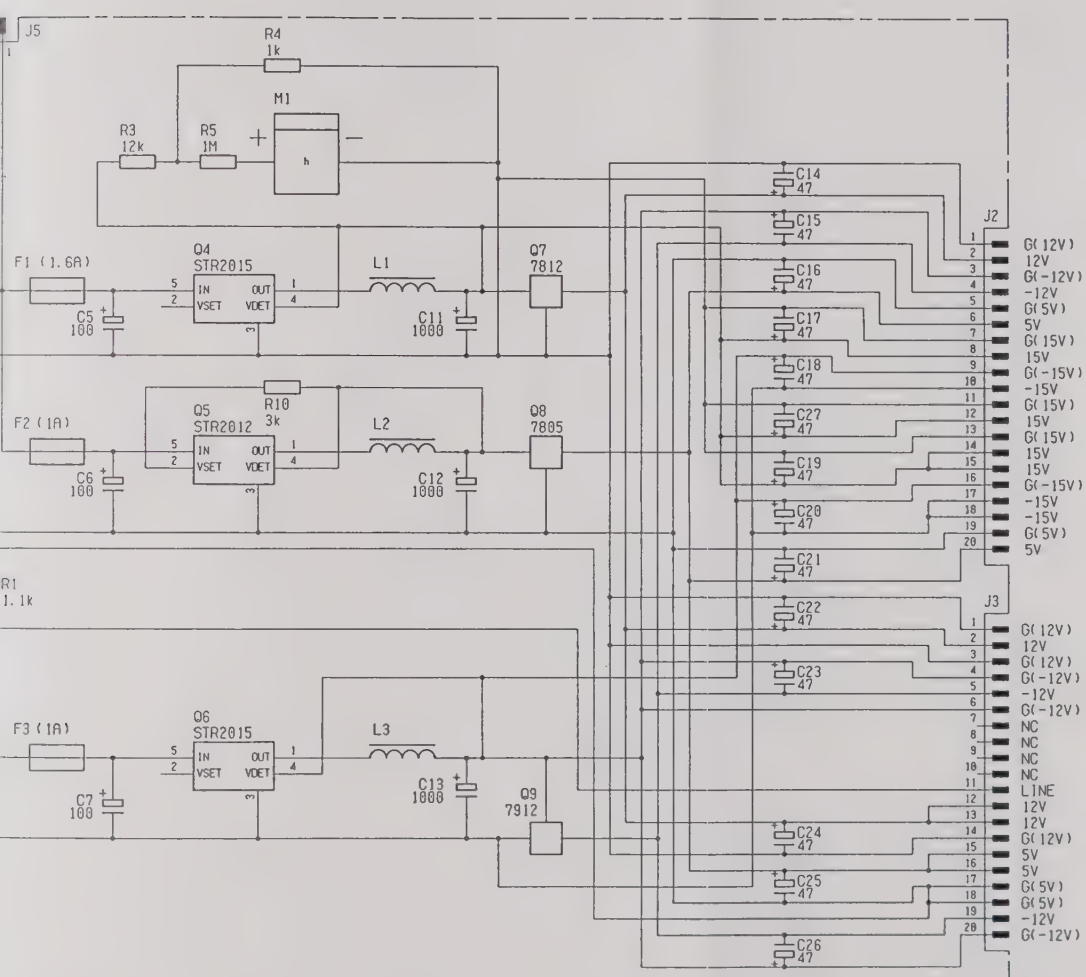
33W32600

APPLICATION

DEP



REVISIONS



QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH

CHECKED BY	DRAWN BY	SCALE	24
APPROVED BY Y. Toda	DESIGNED BY Satou	:	

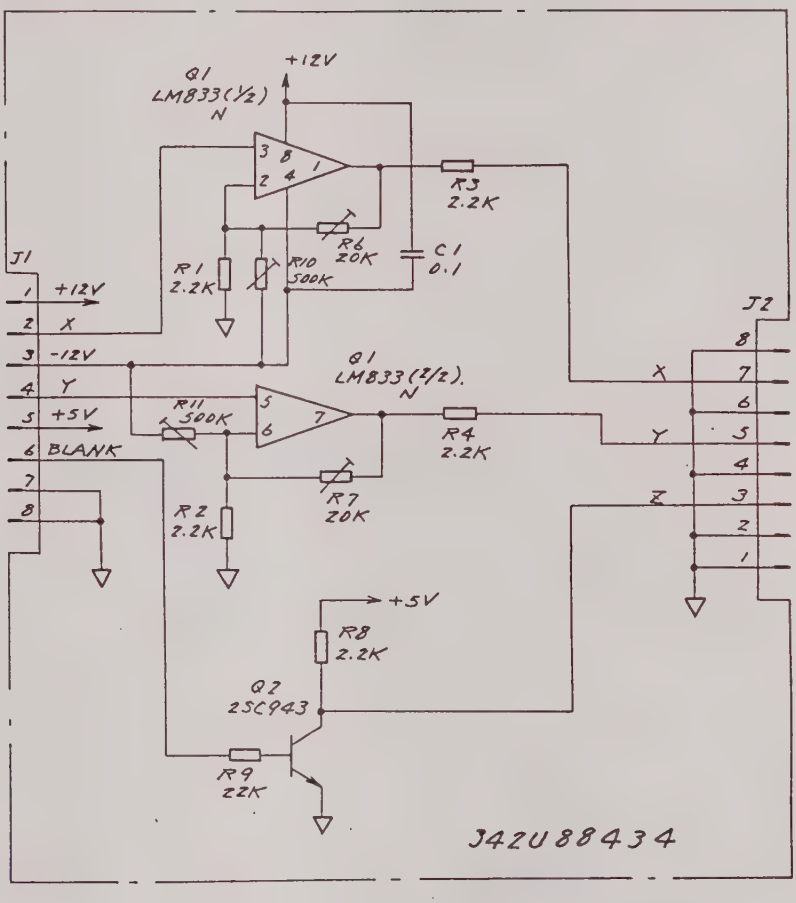
PARTS LIST 34W99736

TITLE
Z7
POWER UNIT Circuit Diagram

DRAWING No.
33W32600 1/1

34W89300 1/1

APPLICATION	REVISIONS



Parts List 34W89299

25

QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH	NOTE

CHECKED BY	TRACED BY	SCALE
APPROVED BY	DRAWN BY	:

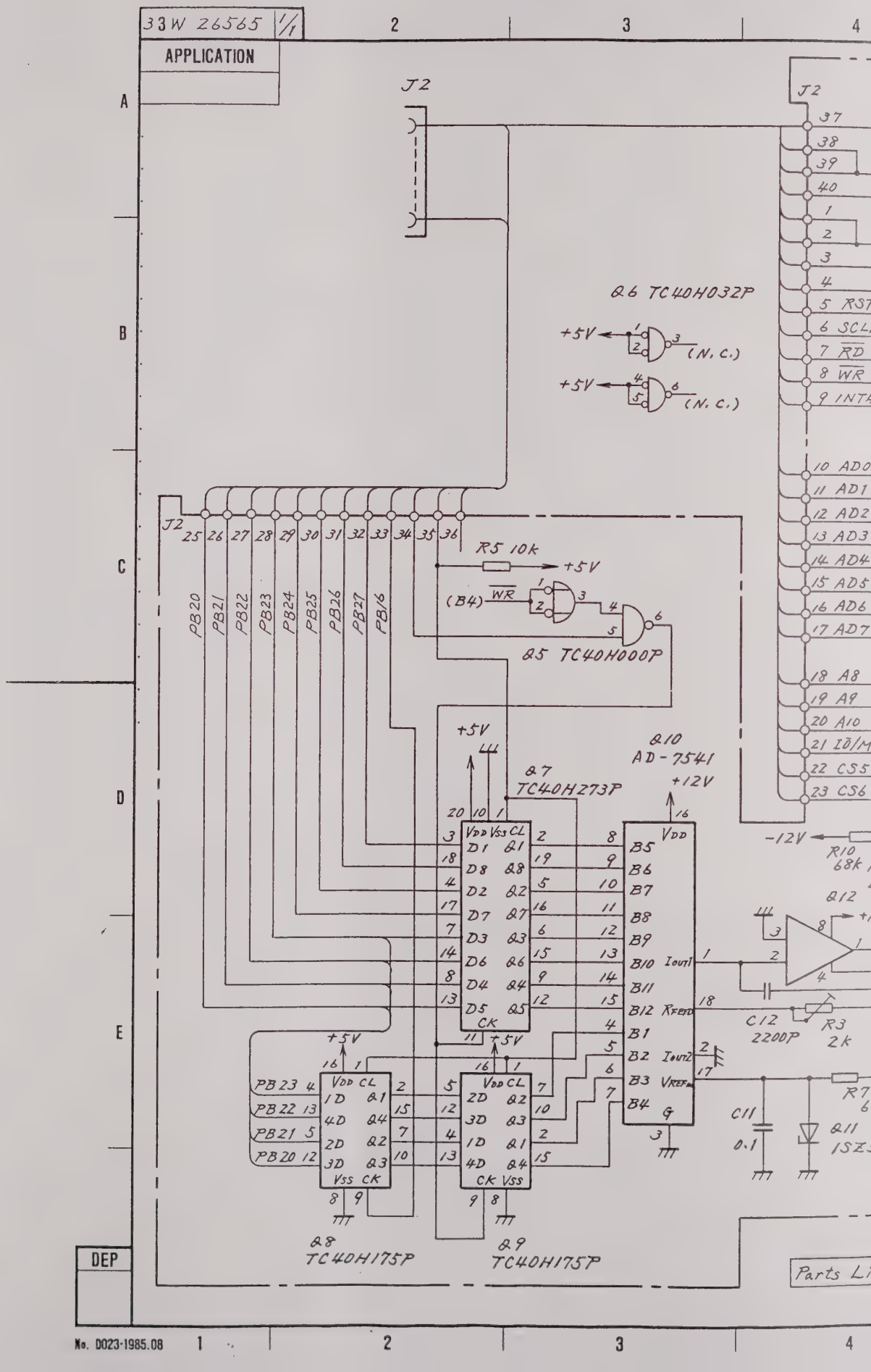
DEP

TITLE: XYZ-OUTPUT Circuit Diagram

DRAWING No. 34W89300 1/1

ANRITSU CORP.

4-75/4-76


33W 26565 1/1
APPLICATION
DEP
J2
Q6 TC40H032P
+5V
(N.C.)
R5 10k
(B4) WR
Q5 TC40H000P
Q7 TC40H273P
Q10 AD-7541
+12V
-12V
R10 68k
Q12
C12 2200P
R3 2k
C11 0.1
Q11 1SZ
Q8 TC40H175P
Q9 TC40H175P
PB20
PB21
PB22
PB23
PB24
PB25
PB26
PB27
PB16
Parts Li
No. D023-1985.08

QTY	ITEM	PART No.	DESCRIPTION	MATERIAL	FINISH

CHECKED BY	TRACED BY	SCALE	
APPROVED BY	DRAWN BY	:	

34W85991

TITLE: GP-IB Circuit Diagram(Option 01)

DRAWING No. 33W26565 1/1

26

ANRITSU CORP.

4-77/4-78

SECTION 5

ADJUSTMENT

5.1 Introduction

This section describes how to adjust the test instrument, after repairs have been completed, to maintain the instrument performance within the specifications.

When two or more units are adjusted, the adjustments must be made in the sequence shown below. If this sequence is reversed, previous adjustments will be disturbed.

Step	Adjustment
1	POWER SUPPLY Z7 Adjustment
2	CRT DRIVE Z12 Adjustment
3	RF Unit: RF Conv. Z2, YTO DRIVE Z5 Adjustment
	3.1 50 MHz Osc (CAL OUTPUT) Z2-Z10 Adjustment
	3.2 2.5 GHz Osc (2nd LOCAL OUTPUT) Z2-Z8 Adjustment
	3.3 2.5214 GHz BPF Adjustment
	3.4 1st Mixer Z2-Z2, Z2 Unit Adjustment
4	IF Unit Z3 Adjustment
5	Overall Adjustment
	5.1 Horizontal Display Adjustment
	5.2 Frequency Display Adjustment
	5.3 Vertical Display Adjustment
	5.4 Overall Gain Adjustment
	5.5 XYZ Output Adjustment

Adjust only the necessary items. If correctly calibrated equipment required for adjustment is not available, do not attempt adjustment.

CAUTION

Before disassembling/reassembling the MS610C/K, turn off the POWER switch on the front panel and disconnect the power supply cord from the ac outlet.

5.2 Internal View Under Covers

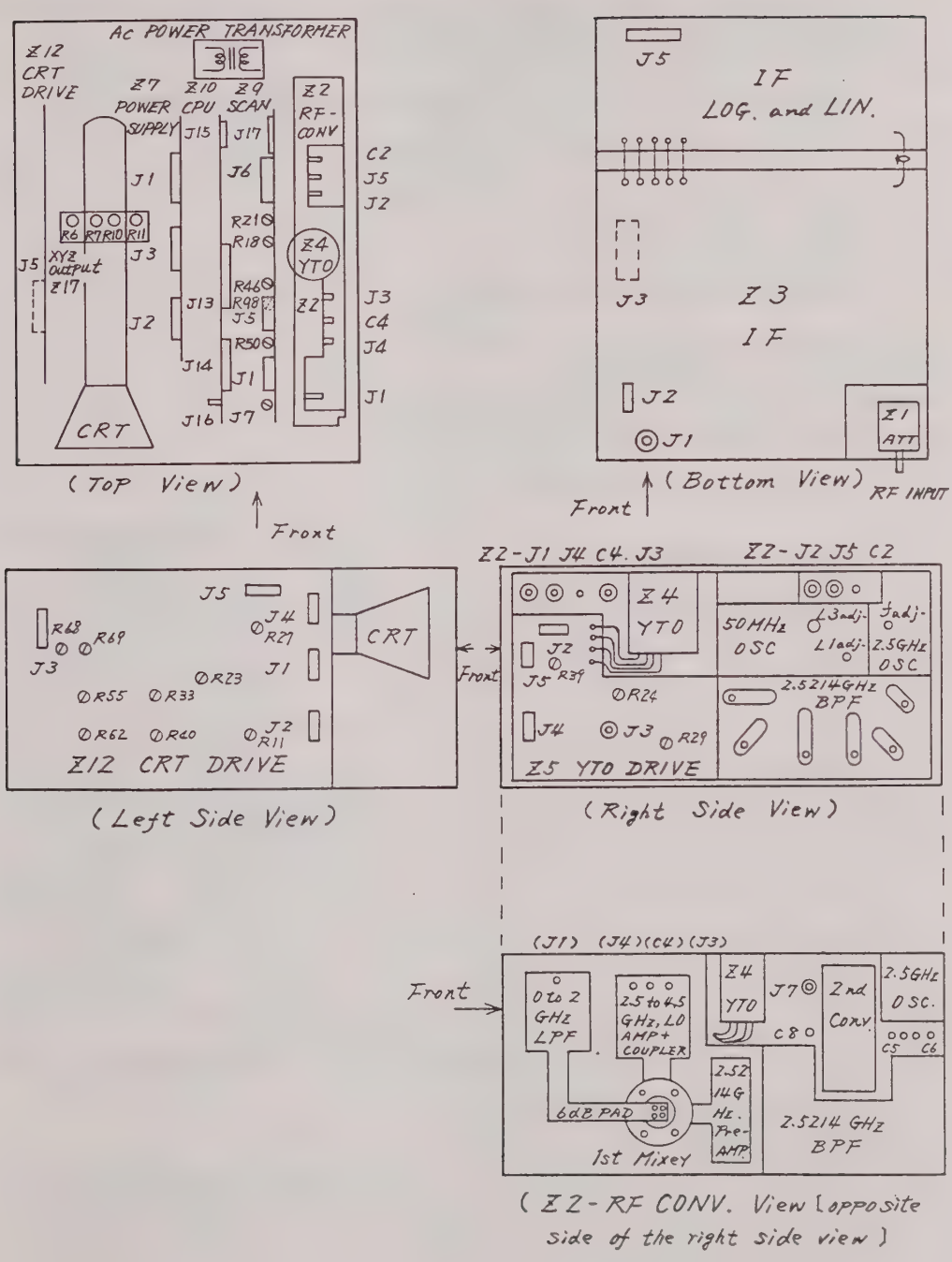


Fig. 5-1 Internal Views Under Outside Covers

5.3 Power Supply Secondary Fuse Replacement

If the dc power supply circuit is shorted to ground or overloaded, the power supply secondary fuse will blow.

Current rating of the fuses are shown below.

+15 V (+12 V)	Fuse 1	1.6 A
+5 V	Fuse 2	1 A
-15 V (-12 V)	Fuse 3	1 A

Replace fuses as follows:

Step	Procedure
1	Disconnect the Z7-J1, J2 and J3 connectors.
2	Lift the angle (hatched in Fig. 5-2) with the Z7 POWER SUPPLY unit. The fuses are on the Z7 PC board.

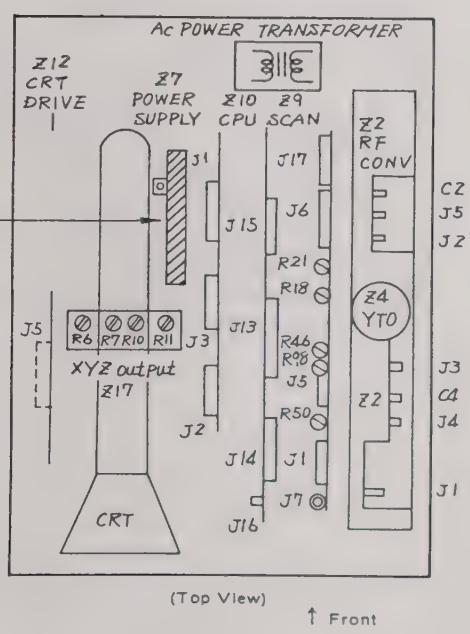


Fig. 5-2 Secondary Fuse Replacement

5.4 Equipment Required for Adjustment

Table 5-1 Equipment Required for Adjustment

No.	Required Equipment	Performance
	Signal Generator:	
1 2 3	MG3633A MG443B	10 kHz to 2.7 GHz, 50 Ω 10 Hz to 30 MHz, 50 Ω/75 Ω
	Spectrum Analyzer:	
4 5	MS710C MS420B	10 kHz to 23 GHz, 50 Ω 10 Hz to 30 MHz, 75 Ω
6	Digital Voltmeter (DVM)	±15 V, 10 mV resolution
	Frequency Counter:	
7	MF76A	10 Hz to 18 GHz
8	Low Pass Filter	fc = 100 kHz to 2 GHz
9	Tracking Generator: MH680A/B	 100 kHz to 2 GHz
10	Power Meter	50 Ω/75 Ω, 100 kHz to 2 GHz
11	Oscilloscope	
12	50 → 75 Ω Impedance Converter	100 kHz to 2 GHz

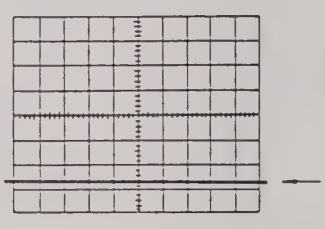
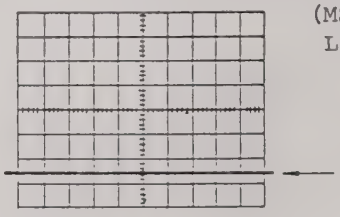
5.5 Adjustment Procedure

5.5.1 POWER SUPPLY Z7 adjustment

No adjustment is necessary. Confirm the dc voltages below.

Z7-J2-#1	GND		#7	GND
2	+12 V		8	+15 V
3	GND		9	GND
4	-12 V		10	-15 V
5	GND			
6	+5 V			

5.5.2 CRT DRIVE Z12 adjustment

Item	Adj. Position	Adjustment	Setting
Intensity Adj.	Z12-R11	Screen display disappears	(MS610C/K) INTENSITY 12 o'clock
Geometry Adj.	Z12-R69	 Straight horizontal bottom line (Not bending)	(MS610C/K) Linear scale
Astigma-tism Adj.	Z12-R68	Best focus	
Focus Adj.	Z12-R23	Best focus	
Trace-Rota-tion Adj.	Z12-R27	 Straight horizontal bottom line (Not inclined)	(MS610C/K) Linear Scale

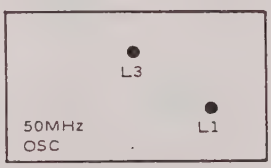
5.5.3 RF Unit: RF CONV. Z2, YTO DRIVE Z5 adjustments

(1) 50 MHz OSC (CAL OUTPUT) Z2-Z10 adjustment

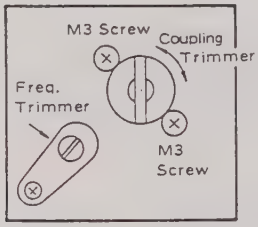
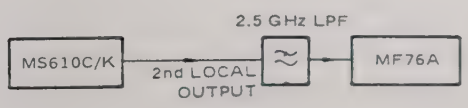
Item	Adj. Position	Adjustment	Setting
Frequency Adj.	Z2-Z10-L1	50.000 MHz	MS610C/K — CAL OUTPUT → MF76A
Lavel Adj.	Z2-Z10-L3	-30 dBm	MS610C/K — CAL OUTPUT → Power Meter (50/75 Ω)

Note:

Adjustments can be made through the hole in the shielded case without opening the case.



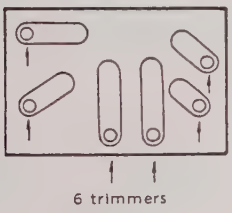
(2) 2.5 GHz OSC (2nd LOCAL OUTPUT) Z2-Z8 adjustment

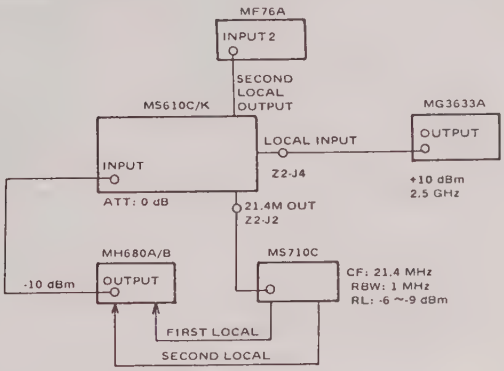
Item	Adj. Position	Adjustment	Setting
Preparation			Open the 2.5 GHz Osc case cover.
Coupling Adj.	Coupling trimmer		
Frequency Adj.	Frequency trimmer	2.500000 GHz	

Step	Procedure
1	Loosen the M3 screws.
2	Turn the coupling trimmer clockwise to stop the oscillation.
3	Then, turn the trimmer counter-clockwise to restart the oscillation.
4	Turn the trimmer clockwise to decrease the frequency by 5 MHz.
5	Tighten down the M3 screws.

(3) 2.5214 GHz BPF adjustment

Item	Adj. Position	Adjustment	Setting



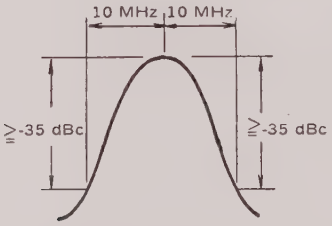


(MS610C/K)
ATT 0 dB

(MS710C)
Center Freq.
21.4 MHz
RBW
1 MHz
Ref. Level
-6 to -9 dBm
SPAN
20 MHz
SCAPE
5 dB/div

BPF Slope Adj.

① 21.4 MHz



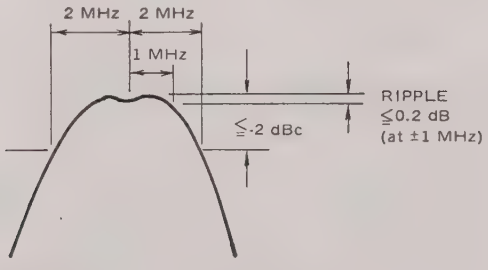
(MS710C) 5 dB/div
SPAN 20 MHz

Adjust

① → ②
(not ② → ①)

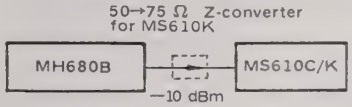
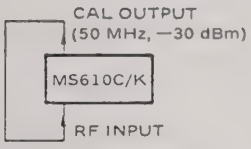
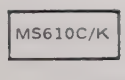
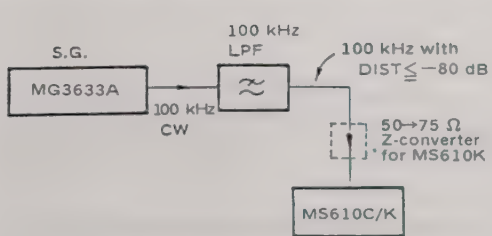
BPF Top Adj.

② 21.4 MHz

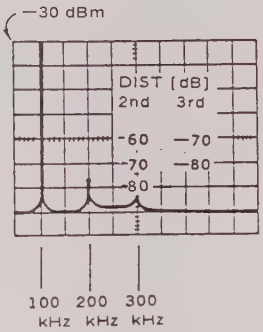
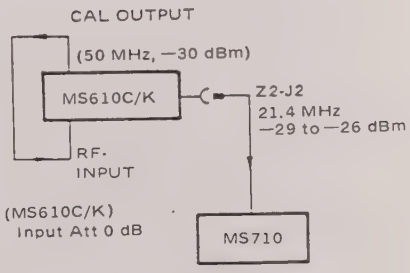


(MS710C) 1 dB/div
SPAN 10 MHz

(4) 1st Mixer Z2-Z2, Z2 Unit adjustment

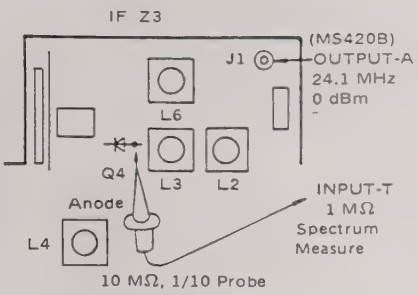
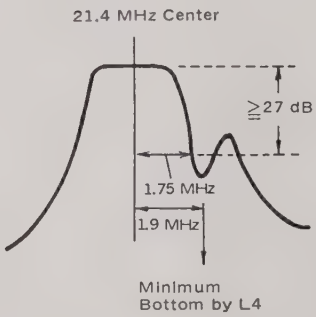
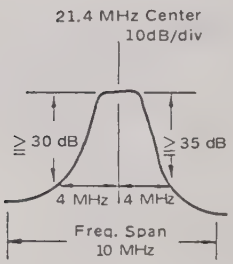
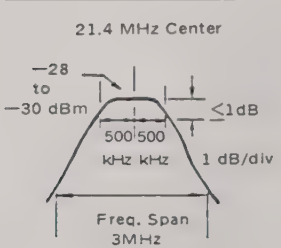
Item	Adj. Position	Adjustment	Setting
RF unit Freq.-Level Characteristic Check		Screen Display: ≦±1.2 dB at 100 kHz to 1.5 GHz (Reference 50 MHz) +1.5 to -2.5 dB at 1.5 to 2 GHz	Tracking Generator  (MS610C/K) Freq. Span 2 GHz Scale 2 dB/div Ref. Level 0 dBm Input Att. 0 to 50 dB (ref. level varies.)
1st Mixer Balance Adj.	① Gain Adj. (on front panel) Adjust ① → ② (not ② → ①)	Screen display -30 dBm	 (MS610C/K) Center Freq. 50 MHz Freq. Span 10 MHz Ref. Level -10 dBm Input Att. 0 dB
	② 1st Mixer Balance Adj. 4 screws	Best Zero ≦-15 dBm	 no input (MS610C/K) Center Freq. 0 MHz Freq. Span 10 MHz Ref. Level -10 dBm Input Att. 0 dB
2nd, 3rd Harmonic Distortion -100 kHz Check			

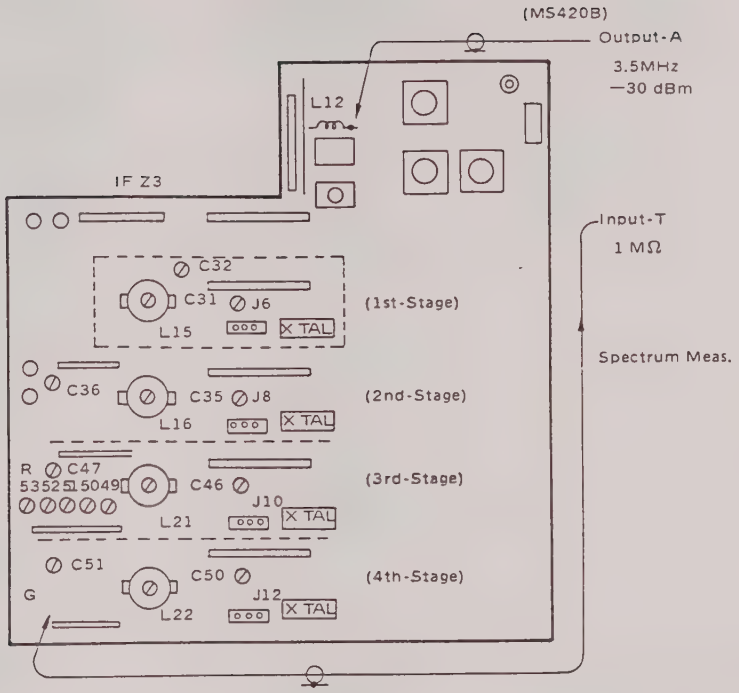
(4) (continued)

Item	Adj. Position	Adjustment	Setting
			(MS610C/K) Center Freq 300 kHz Freq. Span 500 kHz Input Att. 0 dB Ref. Level -30 dBm Step Procedure 1 Receive -30 dBm, and adjust the SG level to set the display on the reference level scale. 2 Change the SG level by +10 dB. (-20 dBm) 3 Then confirm: 2nd harmonics $\leqq$-70 dB 3rd harmonics $\leqq$-70 dB
2nd, 3rd Hormonic Distortion : 100 kHz to 1 GHz			(Similar to at 100 kHz except that LPF output dist. is $\leqq$-90 dB at frequency range of 5 to 800 MHz.)
RF Unit Gain		Gain +1 to +4 dB approximately $\left(\frac{-29 \text{ to } -26 \text{ dBm}}{-30 \text{ dBm}}\right)$	 (MS610C/K) Input Att. 0 dB

5.5.4 IF UNIT Z3 adjustment

(1) Filter and Step Amplifier adjustment

Item	Adj. Position	Adjustment	Setting
21.4 MHz BPF Adj.			(MS610C/K) Gain Adj. (on front panel) Max. counterclockwise
Z3-L4			(MS420B) Scale 10 dB/div Freq. Span 10 MHz
Z3-L2,L3,L6			
			(MS420B) Scale 1 dB/div Freq. Span 3 MHz



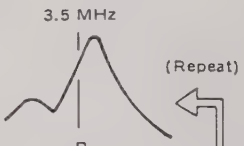
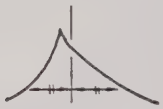
(MS610C/K)

Ref. Level -10 dBm, Input Att. 10 dB,

Reference Level Unit Selector Switch (Rear panel)
"7" and RBW 9 kHz

Fig. 5-3 CRYSTAL Filter Adjustment (Z3 IF)

(1) (continued)

Item	Adj. Position	Adjustment	Setting
Crystal Filter Adj. (1st stage)	J6-left side strapped. J8,J10,J12 -right side strapped	 (Repeat)	Meas. Circuit: Refer to Fig. 5-3 (MS420B) Scale 10 dB/div Freq. span 200 kHz
	Z3-C32	 Symmetrical Bandwidth	
	Z3-L15	 3.5 MHz Peak and Minimum Level	
	Z3-L15	OR 3.5 MHz Peak and Minimum Level	(MS420B) Scale 1 dB/div Freq. Span 50 kHz
(2nd Stage)	J8-left side strapped. J6,J10,J12-right side strapped. Z3-C36,L16	(Similar to 1st stage.)	

(1) (continued)

Item	Adj. Position	Adjustment	Setting
3rd Stage	J10-left side strapped. J6,J8,J12-right side strapped. Z3-C47,L21	(Similar to 1st stage.)	
4th stage	J12-left side strapped. J6,J8,J10-right side strapped. Z3-C51,L22	(Similar to 1st stage.)	

Note:

When Crystal Filter has been adjusted, J6,J8,J10 and J12 are strapped on the left side.

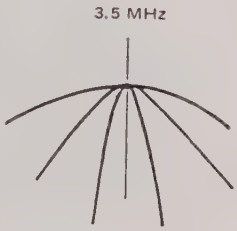
LC Filter Adj.

Z3-C31,C35
C46,C50

Setting is the same as crystal filter adj. except that:
(MS610C/K) RBW 10 kHz
(MS420B) Scale 1 dB/div

RBW Gain Deviation Adj.

	RBW
R53	120 kHz, 1 MHz
R52	100 kHz, 300 kHz
R51	10 kHz
R50	3 kHz, 9 kHz
R49	1 kHz



Setting is similar to crystal filter adj.
Adjust each level of 3.5 MHz at RBW = 1 MHz,300 kHz, 100 kHz,10 kHz,3 kHz, and 1 kHz equal to the level (approx. -33 dBm) of 3.5 MHz at RBW = 30 kHz.

Step Amplifier Check

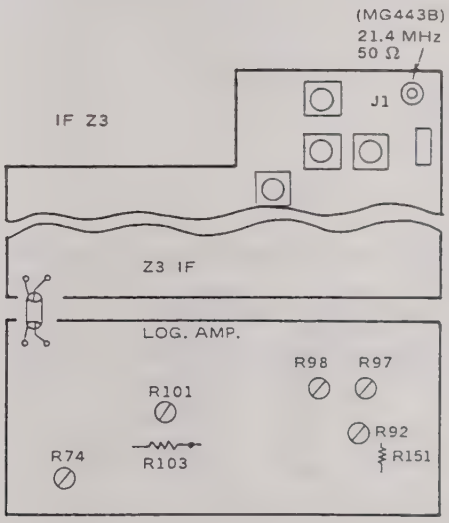
Setting is similar to crystal filter adj.

Step	Procedure
1	Change the MS610C/K Input Atten up or down by 10 dB steps.

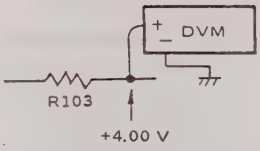
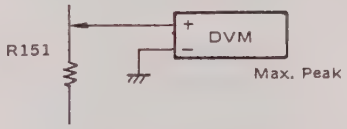
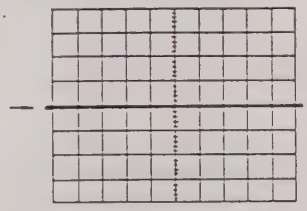
(1) (continued)

Item	Adj. Position	Adjustment	Setting
Step Amplifier Check (cont.)			Step Procedure (cont.) Then check that MS420B level changes by the same amount. (Error $\leqq$ ±0.3 dB) 2 Change the MS610C/K reference level up or down in 2 dB steps. Then check that the MS420B level changes by the same amount. (Error $\leqq$ ±0.2 dB)

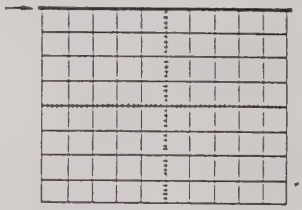
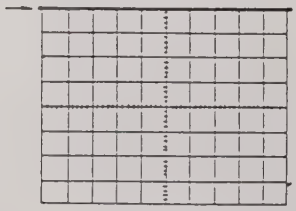
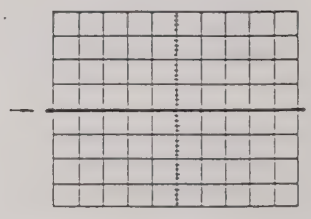
(2) LOG. Amplifier adjustment

Item	Adj. Position	Adjustment	Setting
(Pre-paration)			 (MS610C/K) Ref. Level -10 dBm Input Att. 10 dB Gain Adj. center (±4 dB) RBW 1 kHz Adjust TRACE ROTATION at Linear Scale with no input level. Set INTENSITY knob at 2 o'clock.

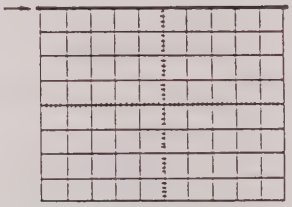
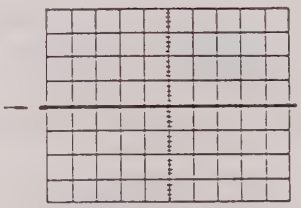
(2) (continued)

Item	Adj. Position	Adjustment	Setting	
Reference +4 V Adj.	R101		(MG443B) (MS610C/K)	-20 dBm 10 dB/div
Linearity of 10 dB/ div Adj. (1)		 Vary the frequency of MG443B in 10 Hz steps to get max. peak voltage on the DVM.	(MG443B) (MS610C/K)	-20 dBm 10 dB/div
(2)	R92	Adjust for DVM +4.000 V		
(3)	R97	Adjust for DVM +2.000 V	(MS610C/K) (MG443B)	10 dB/div -60 dBm
(4)	CRT DRIVE Z12-R40	 Display line on the center horizontal line.	(MS610C/K) (MG443B)	10 dB/div -60 dBm

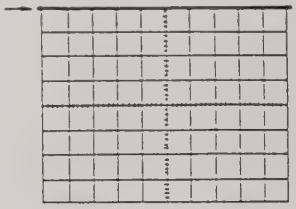
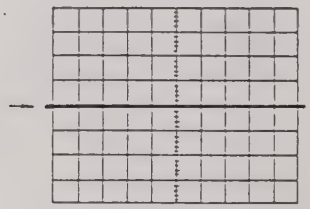
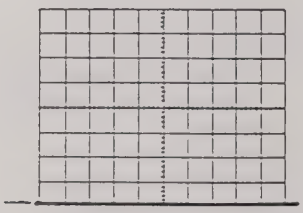
(2) (continued)

Item	Adj. Position	Adjustment	Setting
(5) Linearity of 10 dB/ div Adj. (cont.)	CRT DRIVE Z12-R33	 Display line on the top horizontal line.	(MG443B) -20 dBm (MS610C/K) 10 dB/div
(6)	Measure the level difference (a). a = ([level at 10 dB/div scale] - [level at linear scale]) with no MG443B output level.		
(7)	R92	 Display line on the top horizontal line.	(MG443B) -20+a dBm (MS610C/K) 10 dB/div
(8)	R97	 Display line on the center horizontal line.	(MS610C/K) 10 dB/div (MG443B) -60+a dBm
(9)	Repeat the Items (6) (7) (8) to get a = 0.		

(2) (continued)

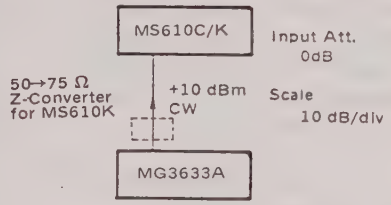
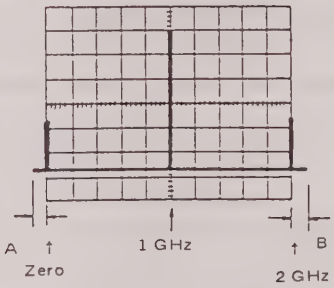
Item	Adj. Position	Adjustment	Setting
(10) Linearity of 10 dB/ div Adj. (cont.)			(MS610C/K) 10 dB/div Vary the level of MG443B by 10 dB steps. Check that the display line variations are 10 ±1.5 dB.
Linearity of 2 dB/ div Adj. (1)	R101	 Display line on the top horizontal line.	(MG443B) -20 dBm (MS610C/K) 2 dB/div
(2)	R98	 Display line on the center horizontal line.	(MS610C/K) 2 dB/div (MG443B) -28 dBm
(3)			(MS610C/K) 2 dB/div Vary the level of MG443B by 2 dB steps. Check that the display line variations are 2 ±1.0 dB.

(2) (continued)

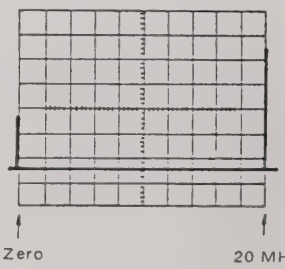
Item	Adj. Position	Adjustment	Setting	
Linear Scale Linearity Adj. (1)	R74	 Display line on the top horizontal line.	(MG443B) (MS610C/K)	-20 dBm Linear Scale
(2)		 Confirm that display line on the center horizontal line.	(MS610C/K) (MG443B)	Linear Scale -26 dBm
(3)		 Confirm that display line on the bottom horizontal line.	(MG443B) (MS610C/K)	OFF Linear Scale

5.5.5 Overall adjustment

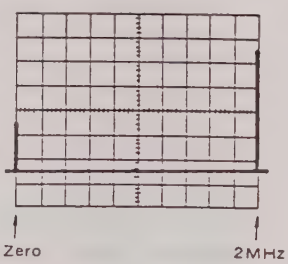
(1) Horizontal display adjustment

Item	Adj. Position	Adjustment	Setting
			
1 GHz Display at 2 GHz Span (Horizontal Position) Adj.	CRT DRIVE Z12-R62	 1 GHz spectrum on center scale line	(MS610C/K) (MG3633A)	Freq. Span 2 GHz (Full) 1 GHz

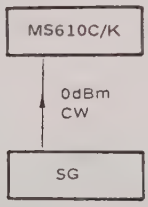
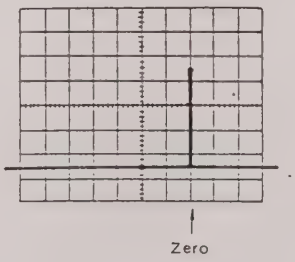
(1) (continued)

Item	Adj. Position	Adjustment	Setting
Zero Beat Display at 2 GHZ Span (Horizontal Gain) Adj.	CRT DRIVE Z12-R55	Zero beat display on the left side scale line. 2 GHz spectrum on the right side scale line.	
Full-scan Voltage Adj.	SCAN Z9-R46	A = B (starting bottom line length A is equal to ending bottom line length B.)	
Zero Beat Display at 1 GHz Span Adj.			(MS610C/K) Freq. Span 1 GHz Start Freq. ON Adjust the Freq. Coarse dial to set the zero beat display on the left side scale line.
	SCAN Z9-R50	Zero beat display on the center scale line.	(MS610C/K) Center Freq. ON
20 MHz Span Adj.	YTO DRIVE Z5-R53	 20 MHz spectrum on the right side scale line	(MS610C/K) Freq. Span 20 MHz Start Freq. ON Adjust the Freq. Coarse dial to set the zero beat display on the left side scale line. (MG3633A) 20 MHz

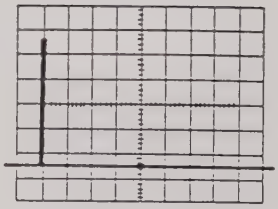
(1) (continued)

Item	Adj. Position	Adjustment	Setting
2 MHz Span Adj.	YTO DRIVE Z5-R11	 2 MHz spectrum on the right side scale line	(MS610C/K) Freq. Span 2 MHz Start Freq. ON Adjust the Freq. Coarse dial to set the zero beat display on the left side scale line. (MG3633A) 2 MHz

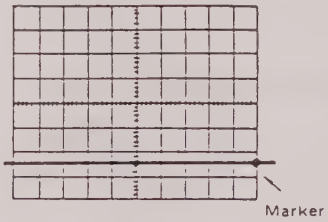
(2) Frequency display adjustment

Item	Adj. Position	Adjustment	Setting
			 Freq. Span 50 MHz
Zero Beat at 50 MHz Span Adj.	YTO DRIVE Z5-R29	 Zero beat display on the 3rd line from right side scale line	(MS610C/K) Freq. Coarse max. counterclockwise Freq. Fine 5 complete turns from either end.

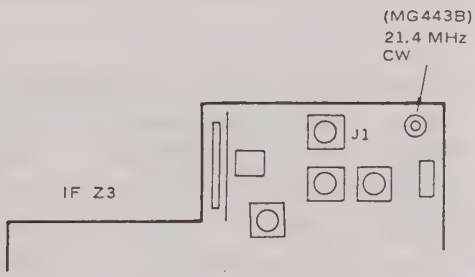
(2) (continued)

Item	Adj. Position	Adjustment	Setting
Freq. Display "0" Adj.	Freq. Zero Adj. (on the front panel)	Frequency display between "0" and "1"	(MS610C/K) Adjust the Freq. Coarse dial to set the zero beat display on the center scale line.
2 GHz Display Adj.	YTO DRIVE Z5-R24	 2 GHz display on the 2nd line from the left side scale line.	(SG(MG724A1)) 2 GHz (MS610C/K) Freq. Coarse- max. clockwise
Freq. Display "1000" Adj.	YTO DRIVE Z5-R39	Frequency display "1000"	(SG(MG3633A)) 1 GHz (MS610C/K) Adjust the Freq. Coarse dial to set the 1 GHz display on the center scale line.
Freq. Display "2000" Adj.	YTO DRIVE Z5-R39	Frequency display "2000" ±2	(SG(MG724A1)) 2 GHz (MS610C/K) Adjust the Freq. Coarse dial to set the 2 GHz display on the center scale line.

(2) (continued)

Item	Adj. Position	Adjustment	Setting
Full Span Marker Adj.	SCAN Z9-R98	 Center position of the Marker on the right side scale line.	(MS610C/K) Frequency display "2000" Freq. Span 2 GHz (Full)

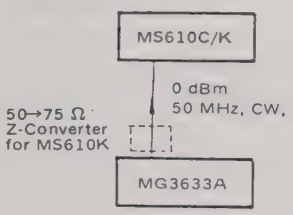
(3) Vertical display adjustment

Item	Adj. Position	Adjustment	Setting
			(MS610C/K) Ref. Level -10 dBm Input Att. 10 dB RBW 1 kHz GAIN ADJ Center (±4 dB)

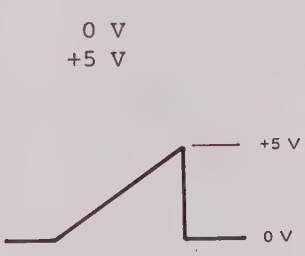
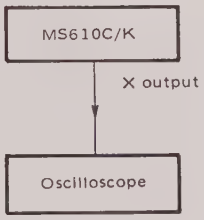
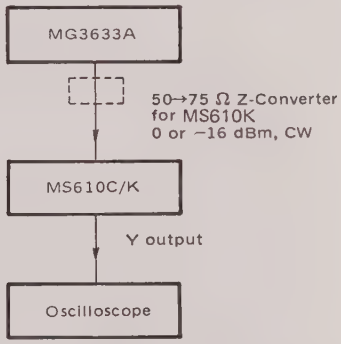
(3) (continued)

Item	Adj. Position	Adjustment	Setting
Marker Level Offset Adj.	SCAN Z9-R21	Level display "-50" dBm	(MG443B) -70 dBm (MS610C/K) Marker Level ON Scale 10 dB/div
Marker Level Gain Adj.	Scan Z9-R18 Adjust Simultaneously	Level display "0.0" dBm	(MG443B) -20 dBm (MS610C/K) Marker Level ON Scale 10 dB/div
Marker Level Linearity Check			(MS610C/K) Marker Level ON Scale 10 dB/div Vary the level of MG443B by 10 dB steps. Check that the marker level display varies by 10 dB.

(4) Overall gain adjustment

Item	Adj. Position	Adjustment	Setting
IF Gain Adj.	IF Z3,-R6,R9	Gain Adj. knob (on front panel) can vary display by ±3 dB or more.	 (MS610C/K) Ref. Level 0 dBm Freq. Span 50 MHz

(5) XYZ output adjustment

Item	Adj. Position	Adjustment	Setting
X output Adj.	XYZ Output Z17-R10 Z17-R6	0 V +5 V	  (MS610C/K) Sweep time 0.5 s
Y output Adj.			
	XYZ Output Z17-R11	0 V	(MS610C/K) RBW 300 kHz Freq. Span 0 MHz Ref. Level 0 dBm Scale 2 dB/div Set the display line on the bottom horizontal line by adjusting GAIN ADJ. (MG3633A) Output level -16 dBm
	XYZ Output Z17-R7	+5 V	(MS610C/K) Set the display line on the top horizontal line by adjusting GAIN ADJ. (MG3633A) Output level 0 dBm

SECTION 6

REPLACEABLE PARTS

6.1 Introduction

This section contains information about ordering replacement parts or components. The following tables (Tables 6-2 and 6-3) shows circuit references (hereafter: CKT REF) and abbreviations used for items in the Parts Lists. The quantity of each item in the Parts List is "one" unless a quantitative description is given in the "NOTE" column.

6.2 Ordering Information

When ordering parts, please supply the following descriptions from the PARTS LIST.

Table 6-1 Ordering INformation

No.	Item	Example
1	Instrument name	MS610C Spectrum Analyzer
2	Part location	Part of MS610C/K Spectrum Analyzer
3	CKT REF	F1
4	Part name	T1A250V Note: Part name is given in parentheses ( ) in the Parts List. Parts with asterisks* require factory adjustment upon repair. When ordering part(s) marked with asterisk, give full description of the part(s).
5	Quantity	1
6	Instrument serial no.	M31257

When ordering PC boards with parts mounted, please include the Z-number under item (2) above instead of items (3) and (4). (See Table 4-1 for PC board number.)

Table 6-2 Circuit References

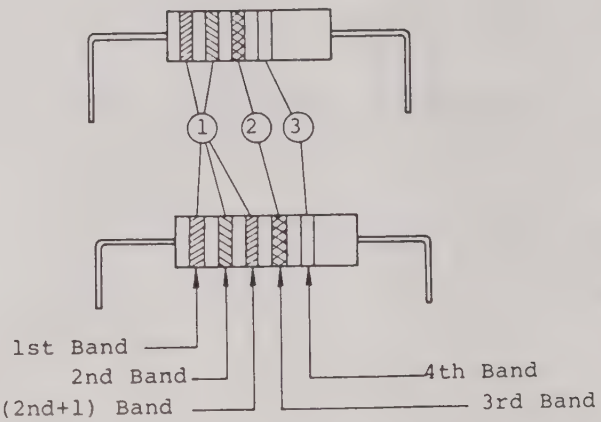
AT:	Attenuator	K:	Relay	Q:	Transistor, diode, IC, rectifier	V:	Neon lamp, vacuum tube
C:	Capacitor	L:	Coil, microinductor	R:	Resistor	X:	Crystal OSC
F:	Fuse	M:	Meter, timer	S:	Switch	Z:	Unit
J:	Jack, plug, connector	P:	Lamp	T:	Transformer		

Table 6-3 Abbreviations

A:	amperes	Multi:	multiplying
Att, R var:	variable attenuator using film elements	N-ch:	N-channel
		non-lin:	non-linear taper
BL:	boundary layer	Non-pol:	non polarity
Cer:	ceramic	NPN:	negative-positive-negative
CF:	carbon film	Ω:	ohms
Comp:	composition	p:	pico (x 10^{-12})
CRT:	cathode-ray tube	Plast:	plastic film
Di:	diode	PMTR:	potentiometer
DIP:	dual in-line package	PNP:	positive-negative-positive
Elect:	electrolytic aluminum	p-p:	peak-to-peak value
F:	farad	RFC:	RF choke
FET:	field-effect transistor	R-lamp:	resistor lamp
G:	ground	rms:	effective value (root-mean-square)
Ge:	germanium	SBD:	Schottky barrier diode
H:	henry	SCR:	silicon-controlled rectifier
Hz:	hertz	Si:	silicon
IC:	integrated circuit	SRD:	step-recovery diode
IEC:	Conforms to IEC Safety Standards.	Tant:	tantalum
J-FET:	junction FET	TM:	time-lag
k:	kilo (x 10^{3})	Tr:	transistor
LED:	light-emitting diode	Trans:	transformer
M:	mega (x 10^{6})	μ:	micro (x 10^{-6})
m:	milli (x 10^{-3})	V:	volt
MF:	metallized film	Var:	variable
MOS-FET:	metal-oxide semiconductor FET	WW:	wire-wound
M paper:	metallized paper	XTAL:	crystal
M plast:	metallized plastic film		

6.3 Reading Resistance/Capacitance

6.3.1 Resistance



COLOR	① Figure		② Multiplier	③ Tolerance
	1st	2nd	3rd	4th
Black	0	0	$x10^0$	-
Brown	1	1	$x10^1$	-
Red	2	2	$x10^2$	-
Orange	3	3	$x10^3$	-
Yellow	4	4	$x10^4$	-
Green	5	5	$x10^5$	±0.5%
Blue	6	6	$x10^6$	-
Purple	7	7	$x10^7$	-
Grey	8	8	$x10^8$	-
White	9	9	$x10^9$	-
Gold	-	-	$x10^{-1}$	±5%
Silver	-	-	$x10^{-2}$	±10%
-----	-	-		±20%

For Examples:

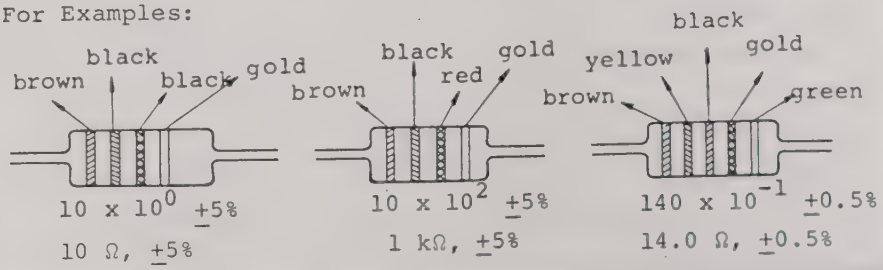
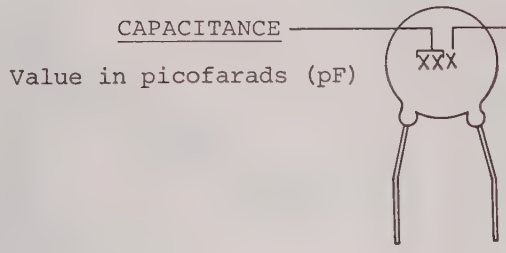


Fig. 6-1 Reading Resistance

6.3.2 Capacitance

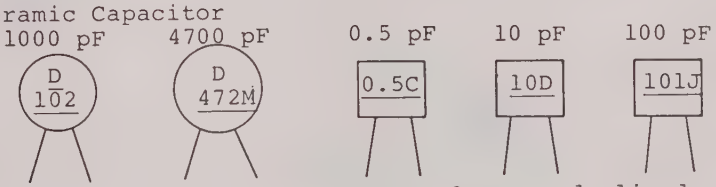


EXAMPLES: 103 = 10,000 pF = 10^{-8} F or 0.01 µF
302 = 3,000 pF = $3x10^{-9}$ F or 0.003 µF
676 = 67,000,000 pF = $67x10^{-6}$ F or 67 µF

(a) Ceramic and polyester capacitors

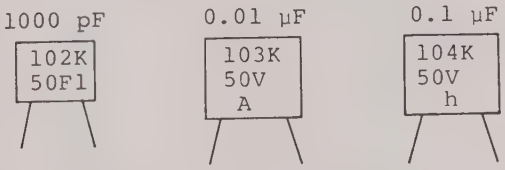
Indication	0.5	1	10	101	102	103	104
Capacity	0.5 pF	1 pF	10 pF	100 pF	1000 pF	0.01 µF	0.1 µF

Example:
Ceramic Capacitor



Capacity values are always underlined.

Polyester Capacitor



(b) Tantalum, metallized, and electrolytic capacitors

Indication	OR47	010	100	101
Capacity	0.47 µF	1 µF	10 µF	100 µF

Fig. 6-2 Reading Capacitance

6.4 Semiconductor Markings

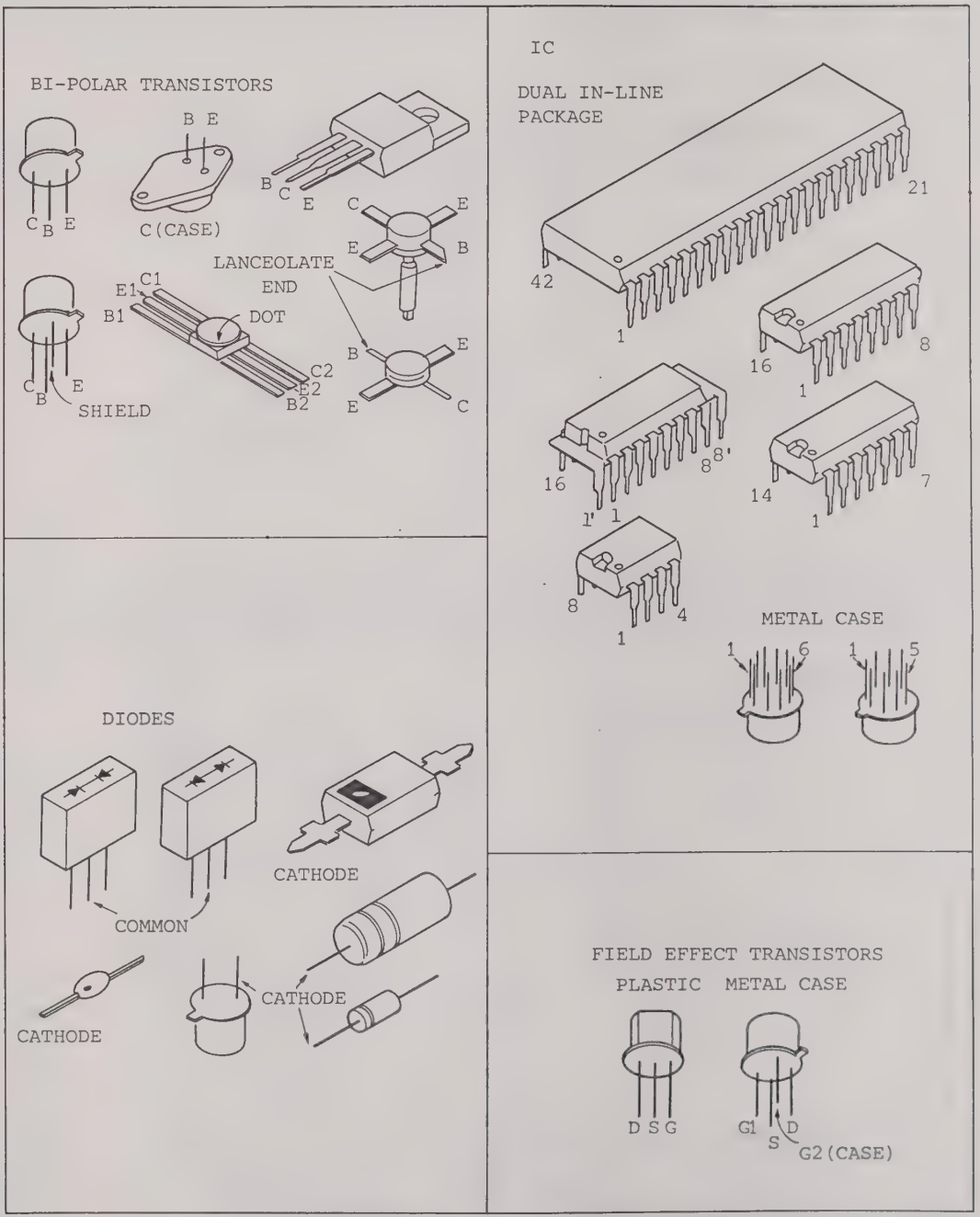


Fig. 6-3 Semiconductor Markings

6.5 Parts List

Circuit Diagram No.	Z No.	Name	Parts List No.
2	-	MS610C/K Spectrum Analyzer	34W 99555
4	Z11	FRONT PANEL (I)	34W 99144
5	Z11	FRONT PANEL (II)	34W 99146
7	Z3	IF	34W 89580
10	Z9 & Z10	SCAN & CPU	34W 90631
12	Z12	CRT DRIVE	34W 85994
14	Z5	YTO DRIVE	34W 85995
16	Z2	RF CONVERTER	34W 85987
17	-	2nd CONVERTER	34W 89581
18	-	50 MHz OSC	34W 85990
19	-	2.5214 GHz PRE AMP	34W 89578
20	-	2.5 to 4.5 GHz LO AMP	34W 89426
21	-	6 dB PAD	34W 89428
22	Z14	DIGITAL SW	34W 86018
24	Z7	POWER SUPPLY	34W 99736
25	Z17	XYZ OUTPUT	34W 89299
26	Z16	GP-IB (Option-1)	34W 85991

Parts List: MS610C/K Spectrum Analyzer 2

CKT REF	DESCRIPTION	RATING	QTY	NOTE
F 1	Fuse,(T1A250V)	1A,250V	1	
F 2	Fuse,(T1A250V)	1A,250V	1	
J 1	Connector,(NM11-2F)		1	
J 2	Connector,(NM11-2F)		1	
J 3	Connector, (27DP-LP-1.5)		1	
J 4	Connector, (27DP-P-1.5)		1	
J 5	Connector,(NM11-2F)		1	
J 6	Connector,(NM11-2F)		1	
J 7	Connector, (27DP-LP-1.5)		1	
J 8	Connector, (27DP-P-1.5)		1	
J 9	Not assigned			
J 10	Connector, (BNC-PJ-1.5)		1	
J 11	Connector, (DF1-15S-2.5R24-30A)		1	
J 12	Connector, (DF1-20S-2.5R24-30D)		1	
J 13	Connector, (DF1-5S-2.5R24-30C)		1	
J 14	Connector, (BNC-PJ-1.5)		1	
J 15	Connector, (DF1-10S-2.5R24-20C)		1	
J 16	Not assigned			
J 17	Connector, (DF1-20S-2.5R24-10C)		1	
J 18	Connector,(27DP-LP1.5)		1	
J 19	Not assigned			
J 20	Socket,(CRT)		1	
J 21	Connector, (DF1-15S-2.5R24-20A)		1	
J 22	Connector, (DF1-3S-2.5R24-15A)		1	
J 23	Not assigned			
J 24	Frame ground terminal		1	
J 25	Inlet,(NC-165)		1	
J 26	Not assigned			
J 27	Connector, (27DP-LP1.5)		1	
J 28	Connector, (DF1-8S2.5R24)		1	

( ): Manufacturer's part number
* : Selected at factory

34W99555 1/3

Parts List: MS610C/K Spectrum Analyzer 2

CKT REF	DESCRIPTION	RATING	QTY	NOTE
J 29	Connector, (DF1-8S2.5R24-30A)		1	
J 30	Connector,(BNC-R-NI)		1	
J 31	Connector,(BNC-R-NI)		1	
J 32	Connector,(BNC-R-NI)		1	
J 33	Connector,(P-1306-DB)		1	
J 34	Connector,(1625-4R)		1	
J 35	Connector,(1625-4P-1)		1	
J 36	Connector, (DF1-8S-2.5R24)		1	
J 37	Connector, (DF1-8S-2.5R24)		1	
J 38	Connector,(MSSR)			
K 1	Relay,(HC4-HTM-DC24V)		1	
R 1	CF,(ARD25T105J)	1MΩ,±5%,1/4W	1	
R 2	Not assigned			
R 3	Not assigned			
S 1	Switch,(1252)		1	
T 1	Power trans,(63HA80)		(1)	
W 1	Cable,(342W99553)		1	
W 2	Cable,(342W99554)		1	
Z 1	Block,(PATT)		1	
Z 2	RF Converter		1	
Z 3	IF PKG		1	
Z 4	YTO			
Z 5	TYO Drive PKG		1	
Z 6	Potentiometer, (20HHP-10S-10KΩJ)		1	
Z 7	Power unit		1	34Z99534
Z 8	Noise filter, (ZCB2203-11)		1	
Z 9	Scan CPU PKG(SCAN)		1	
Z 10	Scan CPU PKG(CPU)		1	

( ): Manufacturer's part number
* : Selected at factory

34W99555 2/3

Parts List: MS610C/K Spectrum Analyzer 2

CKT REF	DESCRIPTION	RATING	QTY	NOTE
Z 11	Front panel(1)(2) PKG		1	
Z 12	CRT Drive PKG		1	
Z 13	CRT,(150 CUB31)		1	
Z 14	Digital SW PKG		1	
Z 15	Potentiometer, (20HP-10S-10KΩH)		1	
Z 16	GP-IB PKG		1	(Option)
Z 17	XYZ-Output PKG		1	

( ): Manufacturer's part number
* : Selected at factory

34W99555 3/3

Parts List: FRONT PANEL (1) 4

CKT REF	DESCRIPTION	RATING	QTY	NOTE
C 1 to C 20	Not assigned			
C 21	Cer,(CK924F1H104Z)	0.1μF,+80/-20%,50V	1	
C 22	Tant,(CS-E1V4R7M)	4.7μF,±20%,35V	1	
C 23	Cer,(CK924F1H104Z)	0.1μF,+80/-20%,50V	1	
J 1	Not assigned			
J 2	Connector, (FSN-23A-20)		1	
J 3	Connector, (FSN-23A-15)		1	
J 4	Connector, (FSN-23A-10)		1	
J 5	Connector,(Z220-14FD)		1	
J 6	Not assigned			
J 7	Connector, (DF1-2P2.5DSA)	2P	1	
J 8	Connector, (DF1-8P2.5DSA)	8P	1	
Q 1	LED,(GL8E056)		1	
Q 2	LED,(GL8E056)		1	
Q 3	LED,(GL8E056)		1	
Q 4	LED,(GL8E056)		1	
Q 5	LED,(GL8E040)		1	
Q 6	LED,(GL9E040)		1	
Q 7	LED,(GL8E040)		1	
Q 8	LED,(GL8E040)		1	
Q 9	LED,(GL8E040)		1	
Q 10	LED,(GL8E040)		1	
Q 11	LED,(GL8E040)		1	
Q 12	LED,(GL8E040)		1	
Q 13	Not assigned			
Q 14	Not assigned			
Q 15	Not assigned			
Q 16	Not assigned			
Q 17	Not assigned			
Q 18	Not assigned			
Q 19	Not assigned			
Q 20	Not assigned			
Q 21	Not assigned			
Q 22	Not assigned			

( ): Manufacturer's part number
* : Selected at factory

34W99144 1/5

Parts List: FRONT PANEL (1) 4

CKT REF	DESCRIPTION	RATING	QTY	NOTE
Q 23	Not assigned			
Q 24	Not assigned			
Q 25	Not assigned			
Q 26	Not assigned			
Q 27	IC,(TC4511BP)		1	
Q 28	IC,(TC4511BP)		1	
Q 29	Not assigned			
Q 30	Not assigned			
Q 31	Not assigned			
Q 32	Not assigned			
Q 33	Not assigned			
Q 34	Not assigned			
Q 35	IC,(TC4511BP)		1	
Q 36	IC,(TC4511BP)		1	
Q 37	Not assigned			
Q 38	Not assigned			
Q 39	Not assigned			
Q 40	LED,(LT9002E)		1	
Q 41	LED,(LT9002E)		1	
Q 42	LED,(TLG226)		1	
Q 43	LED,(TLG226)		1	
Q 44	LED,(LT9002E)		1	
Q 45	LED,(LT9002E)		1	
Q 46	LED,(LT9002E)		1	
Q 47	LED,(LT9002E)		1	
Q 48	LED,(LT9002E)		1	
Q 49	LED,(TLG226)		1	
Q 50	LED,(LT9002E)		1	
Q 51	LED,(LT9002E)		1	
Q 52	LED,(LT9002E)		1	
Q 53	LED,(LT9002E)		1	
Q 54	LED,(TLG226)		1	
Q 55	LED,(TLG226)		1	
Q 56	LED,(TLG226)		1	
Q 57	LED,(TLG226)		1	
Q 58	LED,(TLG226)		1	
Q 59	LED,(TLG226)		1	
Q 60	LED,(TLG226)		1	
Q 61	Not assigned			
Q 62	LED,(M85A-0NG01)		1	
Q 63	LED,(M85A-0NA01)		1	
Q 64	LED,(M85A-0NA01)		1	
Q 65	LED,(M85A-0NA01)		1	

( ): Manufacturer's part number

* : Selected at factory

Parts List: FRONT PANEL (1) 4

CKT REF	DESCRIPTION	RATING	QTY	NOTE
Q 66	Not assigned			
Q 67	LED,(M85A-0NG01)		1	
Q 68	LED,(HL21-LSYG)		1	
Q 69	LED,(HL21-LSYG)		1	
Q 70	LED,(HL21-LSYG)		1	
Q 71	LED,(M85A-0NA01)		1	
Q 72	LED,(M85A-0NA01)		1	
Q 73	Not assigned			
Q 74	Di,breakdown, (RD2.7EB)	2.5 to 2.9V,500mV	1	
Q 75	Not assigned			
Q 76	Not assigned			
Q 77	Not assigned			
Q 78	Not assigned			
Q 79	Not assigned			
Q 80	Not assigned			
Q 81	Not assigned			
Q 82	Not assigned			
Q 83	Not assigned			
Q 84	IC,(MM74C923N)		1	
Q 85	LED,(TLG226)		1	
Q 86	LED,(TLG226)		1	
Q 87	LED,(TLG226)		1	
Q 88	LED,(TLG226)		1	
Q 89	LED,(TLG226)		1	
Q 90	LED,(TLG226)		1	
Q 91	LED,(TLG226)		1	
Q 92	IC,(TC4511BP)		1	
Q 93	IC,(TC4511BP)		1	
Q 94	Not assigned			
Q 95	Not assigned			
Q 96	LED,(TLR226)		1	
R 1	Not assigned			
R 2	Not assigned			
R 3	SIL type, (RRS-7-331JB)	330Ω,1/8W	1	
R 4	SIL type, (RRS-7-331JB)	330Ω,1/8W	1	
R 5	SIL type, (RRS-7-331JB)	330Ω,1/8W	1	
R 6	SIL type, (RRS-7-331JB)	330Ω,1/8W	1	

( ): Manufacturer's part number

* : Selected at factory

Parts List: FRONT PANEL (1) 4

CKT REF	DESCRIPTION	RATING	QTY	NOTE
R 7	Not assigned			
R 8	Not assigned			
R 9	Not assigned			
R 10	Not assigned			
R 11	Not assigned			
R 12	Not assigned			
R 13	SIL type, (RRS-7-561JB)	560Ω,1/8W	1	
R 14	SIL type, (RRS-7-561JB)	560Ω,1/8W	1	
R 15	Not assigned			
R 16	Not assigned			
R 17	Not assigned			
R 18	Not assigned			
R 19	Not assigned			
R 20	CF,(ARD25T331J)	330Ω,±5%,1/4W	1	
R 21	Ver,MF,(RJ-13P2KΩ)	2kΩ,1/2W	1	
R 22	CF,(ARD25T122J)	1.2kΩ,±5%,1/4W	1	
R 23	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W	1	
R 24	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W	1	
R 25	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W	1	
R 26	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W	1	
R 27	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W	1	
R 28	SIL type, (RRS-7-561JB)	560Ω,1/8W	1	
R 29	SIL type, (RRS-7-561JB)	560Ω,1/8W	1	
R 30	Not assigned			
R 31	Not assigned			
R 32	Ver,MF, (RG161P15SB10KΩM)	10kΩ,±20%,1/2W	1	
R 33	Ver,MF, (RG161P15SB10KΩM)	10kΩ,±20%,1/2W	1	
R 34	MF,(RS2FS100JL)	10Ω	1	
S 1	LED,(M85A-0NG01)		(1)	
S 2	LED,(M85A-0NA01)		(1)	
S 3	LED,(HL21-LSYG)		(1)	
S 4	LED,(M85A-0NA01)		(1)	
S 5	LED,(M85A-0NG01)		(1)	
S 6	LED,(M85A-0NA01)		(1)	
S 7	LED,(HL21-LSYG)		(1)	
S 8	LED,(M85A-0NA01)		1	
S 9	LED,(M85A-0N001)		(1)	
S 10	LED,(HL21-LSYG)			

( ): Manufacturer's part number

* : Selected at factory

Parts List: FRONT PANEL (1) 4

CKT REF	DESCRIPTION	RATING	QTY	NOTE
S 11	LED,(HL21-NS)		1	
S 12	LED,(M85A-0NA01)		(1)	
S 13	LED,(HL21-NS)		1	
S 14	LED,(M85A-0N001)		1	
S 15	LED,(M85A-0N001)		1	
S 16	LED,(HL21-NS)		1	
S 17	LED,(HL21-NS)		1	
Z 1	DSS310-55D223S50		1	

( ): Manufacturer's part number

* : Selected at factory

Parts List: FRONT PANEL (2) 5

CKT REF	DESCRIPTION	RATING	QTY	NOTE
C 1	Cer,(CK924F1H104Z)	0.1uF,+80/-20%,50V	1	
C 2	Cer,(CK924F1H104Z)	0.1uF,+80/-20%,50V	1	
C 3	Cer,(CK924F1H104Z)	0.1uF,+80/-20%,50V	1	
C 4	Cer,(CK924F1H104Z)	0.1uF,+80/-20%,50V	1	
C 5	Cer,(CK924F1H104Z)	0.1uF,+80/-20%,50V	1	
C 6	Cer,(CK924F1H104Z)	0.1uF,+80/-20%,50V	1	
C 7	Cer,(CK924F1H104Z)	0.1uF,+80/-20%,50V	1	
C 8	Cer,(CK924F1H104Z)	0.1uF,+80/-20%,50V	1	
C 9	Cer,(CK924F1H104Z)	0.1uF,+80/-20%,50V	1	
J 1	Connector, (DF1-20P2.5DSA)	20P	1	
J 2	Not assigned			
J 3	Not assigned			
J 4	Not assigned			
J 5	Connector, (FFC-14T9AMEP)		1	
J 6	Connector, (CNF2-50DAB020S)		1	
Q 1	Not assigned			
Q 2	Not assigned			
Q 3	Not assigned			
Q 4	Not assigned			
Q 5	Not assigned			
Q 6	Not assigned			
Q 7	Not assigned			
Q 8	Not assigned			
Q 9	Not assigned			
Q 10	Not assigned			
Q 11	Not assigned			
Q 12	Not assigned			
Q 13	Not assigned			
Q 14	Not assigned			
Q 15	Not assigned			
Q 16	Not assigned			
Q 17	Not assigned			
Q 18	Not assigned			
Q 19	Not assigned			
Q 20	Not assigned			
Q 21	Not assigned			
Q 22	IC,(TD62003P)		1	
Q 23	IC,(TD62003P)		1	

( ): Manufacturer's part number
* : Selected at factory

Parts List: FRONT PANEL (2) 5

CKT REF	DESCRIPTION	RATING	QTY	NOTE
Q 24	Not assigned			
Q 25	IC,(TC4511BP)		1	
Q 26	IC,(TC4511BP)		1	
Q 27	Not assigned			
Q 28	Not assigned			
Q 29	Not assigned			
Q 30	IC,(TC4099BP)		1	
Q 31	Not assigned			
Q 32	IC,(TC4511BP)		1	
Q 33	IC,(TC4511BP)		1	
Q 34	IC,(TC4099BP)		1	
Q 35	Not assigned			
Q 36	Not assigned			
Q 37	IC,(TC40H042P)		1	
Q 38	IC,(TC40H042P)		1	
Q 39	IC,(TC4011BP)		1	
Q 40	Not assigned			
Q 41	Not assigned			
Q 42	Not assigned			
Q 43	Not assigned			
Q 44	Not assigned			
Q 45	Not assigned			
Q 46	Not assigned			
Q 47	Not assigned			
Q 48	Not assigned			
Q 49	Not assigned			
Q 50	Not assigned			
Q 51	Not assigned			
Q 52	Not assigned			
Q 53	Not assigned			
Q 54	Not assigned			
Q 55	Not assigned			
Q 56	Not assigned			
Q 57	Not assigned			
Q 58	Not assigned			
Q 59	Not assigned			
Q 60	Not assigned			
Q 61	Not assigned			
Q 62	Not assigned			
Q 63	Not assigned			
Q 64	Not assigned			
Q 65	Not assigned			
Q 66	Not assigned			
Q 67	Not assigned			

( ): Manufacturer's part number
* : Selected at factory

Parts List: FRONT PANEL (2) 5

CKT REF	DESCRIPTION	RATING	QTY	NOTE
Q 68	Not assigned			
Q 69	Not assigned			
Q 70	Not assigned			
Q 71	Not assigned			
Q 72	Not assigned			
Q 73	Not assigned			
Q 74	Not assigned			
Q 75	IC,(TD62003P)		1	
Q 76	IC,(TD62003P)		1	
Q 77	IC,(TD62003P)		1	
Q 78	IC,(TD62003P)		1	
Q 79	IC,(TD62003P)		1	
Q 80	IC,(TC4099BP)		1	
Q 81	IC,(TC4099BP)		1	
Q 82	IC,(TC4099BP)		1	
Q 83	IC,(TC4099BP)		1	
Q 84	Not assigned			
Q 85	Not assigned			
Q 86	Not assigned			
Q 87	Not assigned			
Q 88	Not assigned			
Q 89	Not assigned			
Q 90	IC,(74HC08)		1	
Q 91	IC,(74HC08)		1	
Q 92	IC,(TD62003P)		1	
R 1	Not assigned			
R 2	Not assigned			
R 3	Not assigned			
R 4	Not assigned			
R 5	Not assigned			
R 6	Not assigned			
R 7	Not assigned			
R 8	Dual in-line array, (AHR-7-561JB)	1kΩ	1	
R 9	Dual in-line array, (AHR-7-561JB)	1kΩ	1	
R 10	Dual in-line array, (AHR-7-561JB)	1kΩ	1	
R 11	Not assigned			
R 12	Dual in-line array, (AHR-7-561JB)	1kΩ	1	
R 13	Not assigned			

( ): Manufacturer's part number
* : Selected at factory

Parts List: FRONT PANEL (2) 5

CKT REF	DESCRIPTION	RATING	QTY	NOTE
R 14	Not assigned			
R 15	Dual in-line array, (AHR-7-331JB)	330Ω,1/8W	1	
R 16	Dual in-line array, (AHR-7-331JB)	330Ω,1/8W	1	
R 17	Dual in-line array, (AHR-7-561JB)	560Ω,1/8W	1	
R 18	Dual in-line array, (AHR-7-561JB)	560Ω,1/8W	1	
R 19	Dual in-line array, (AHR-7-561JB)	560Ω,1/8W	1	
R 20	Dual in-line array, (AHR-7-331JB)	330Ω,1/8W	1	

( ): Manufacturer's part number
* : Selected at factory

Parts List : IF 7

CKT REF	DESCRIPTION	RATING	NOTE
C 1	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C 2	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C 3	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C 4	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C 5	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C 6	Cer,(CC924CH1H561J)	560pF,±5%,50V	
C 7	Cer,(CC45CH1H100DY)	10pF,±0.5pF,50V	
C 8	Cer,(CC45CH1H240JY)	24pF,±5%,50V	
C 9	Not assigned		
C10	Cer,(CC924CH1H561J)	560pF,±5%,50V	
C11	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C12	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C13	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C14	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C15	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C16	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C17	Not assigned		
C18	Cer,(CC45CH1H050CY)	5pF,±0.25pF,50V	
C19	Cer,(CC45CH1H101JY)	100pF,±5%,50V	
C20	Not assigned		
C21	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C22	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C23	Not assigned		
C24	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C25	Not assigned		
C26	Cer,(CK45B1H102KY)	1000pF,±10%,50V	
C27	Elect,(CE04W1E221)	220_F,±20%,25V	
C28	Elect,(CE04W1E221)	220_F,±20%,25V	
C29	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C30	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C31	Var,Cer,(TZ03R200A)	20pF,±0.05pF,100V	
C32	Var,Cer,(TZ03R200A)	20pF,±0.05pF,100V	
C33	Cer,(CC45CH1H100DY)	10pF,±0.5pF,50V	
C34	Cer,(CC92PH1H101JY)	100pF,±5%,50V	
C35	Var,Cer,(TZ03R200A)	20pF,±0.05pF,100V	
C36	Var,Cer,(TZ03R200A)	20pF,±0.05pF,100V	
C37	Cer,(CC45CH1H100DY)	10pF,±0.5pF,50V	
C38	Cer,(CC92PH1H101JY)	100pF,±5%,50V	
C39	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C40	Elect,(CE04W1E221)	220_F,±20%,25V	
C41	Elect,(CE04W1E221)	220_F,±20%,25V	
C42	Not assigned		
C43	Not assigned		
C44	Not assigned		
C45	Not assigned		

( ): Manufacturer's part number
• : Selected at factory

Parts List : IF 7

CKT REF	DESCRIPTION	RATING	NOTE
C46	Var,Cer,(TZ03R200A)	20pF,±0.05pF,100V	
C47	Var,Cer,(TZ03R200A)	20pF,±0.05pF,100V	
C48	Cer,(CC45CH1H100DY)	10pF,±0.5pF,50V	
C49	Cer,(CC92PH1H101JY)	100pF,±5%,50V	
C50	Var,Cer,(TZ03R200A)	20pF,±0.05pF,100V	
C51	Var,Cer,(TZ03R200A)	20pF,±0.05pF,100V	
C52	Cer,(CC45CH1H100DY)	10pF,±0.5pF,50V	
C53	Cer,(CC92PH1H101JY)	100pF,±5%,50V	
C54	Not assigned		
C55	Elect,(CE04W1E221)	220_F,±20%,25V	
C56	Elect,(CE04W1E221)	220_F,±20%,25V	
C57	Not assigned		
C58	Cer,(CC45CH1H100DY)	10pF,±0.5pF,50V	
C59	Cer,(CC45CH1H100DY)	10pF,±0.5pF,50V	
C60	Cer,(CC45CH1H100DY)	10pF,±0.5pF,50V	
C61	Cer,(CC45CH1H100DY)	10pF,±0.5pF,50V	
C62	Not assigned		
C63	Elect,(CE04W1E221)	220_F,±20%,25V	
C64	Elect,(CE04W1E221)	220_F,±20%,25V	
C65	Not assigned		
C66	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C67	Elect,(CE04W1J010)	1_F,±20%,63V	
C68	Cer,(CK924C1H103M)	0.01_F,±20%,50V	
C69	Cer,(CK924C1H103M)	0.01_F,±20%,50V	
C70	Elect,(CE04W1J010)	1_F,±20%,63V	
C71	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C72	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C73	Cer,(CC45CH1H180JY)	18pF,±5%,50V	
C74	Cer,(CC45CH1H220JY)	22pF,±5%,50V	
C75	Cer,(CK924C1H103M)	0.01_F,±20%,50V	
C76	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C77	Cer,(CK45B1H102KY)	1000pF,±10%,50V	
C78	Not assigned		
C79	Cer,(CK924C1H103M)	0.01_F,±20%,50V	
C80	Cer,(CC924CH1H331J)	330pF,±5%,50V	
C81	Cer,(CC924CH1H331J)	330pF,±5%,50V	
C82	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C83	Not assigned		
C84	Elect,(CE04W1J010)	1_F,±20%,63V	
C85	Not assigned		
C86	Not assigned		
C87	Not assigned		
C88	Not assigned		
C89	Not assigned		
C90	Not assigned		

( ): Manufacturer's part number
• : Selected at factory

Parts List : IF 7

CKT REF	DESCRIPTION	RATING	NOTE
C91	Cer,(CC924CH1H221J)	220pF,±5%,50V	CP Equipment
C92	Cer,(CC924CH1H221J)	220pF,±5%,50V	
C93	Not assigned		
C94	Plast,(ECQ-V1H474JW)	0.47_F,±5%,50V	CP Equipment
C95	Elect,(CE04C1J100)	10_F,±20%,63V	CP Equipment
C96	Elect,(CE04C1J100)	10_F,±20%,63V	CP Equipment
C97	Cer,(CC45CH1H100DY)	10pF,±0.5pF,50V	CP Equipment
C98	Cer,(CK924F1H104Z)	0.1_F,+80,-20%,50V	CP Equipment
C99	Cer,(CC45CH1H330JY)	33pF,±5%,50V	
C100	Cer,(CC45CK1H020C)	2pF,±0.25pF,50V	
C101	Cer,(CC45CH1H100DY)	10pF,±0.5pF,50V	
C102	Cer,(CC45CH1H100DY)	10pF,±0.5pF,50V	
C103	Cer,(CC45CH1H220JY)	22pF,±5%,50V	
C104	Not assigned		
C105	Cer,(CC45CH1H680JY)	68pF,±5%,50V	
C106	Cer,(CC924CH1H221J)	220pF,±5%,50V	
C107	Cer,(CC45CH1H560JY)	56pF,±5%,50V	
C108	Cer,(CC45CH1H090CY)	9pF,±5%,50V	
C109	Cer,(CK924F1H104Z)	0.1_F,+80,-20%,50V	
C110	Cer,(CC45CH1H090CY)	9pF,±5%,50V	
C111	Not assigned		
C112	Cer,(CC45CH1H090JY)	9pF,±5%,50V	
C113	Not assigned		
C114	Cer,(CC45CH1H090CY)	9pF,±5%,50V	
C115	Cer,(CK924F1H104Z)	0.1_F,+80,-20%,50V	
C116	Cer,(CC45CH1H560JY)	56pF,±5%,50V	
C117	Cer,(CK924F1H104Z)	0.1_F,+80,-20%,50V	
C118	Cer,(CK924F1H104Z)	0.1_F,+80,-20%,50V	
C119	Cer,(CK924F1H104Z)	0.1_F,+80,-20%,50V	
C120	Cer,(CC45CH1HJ00JY)	30pF,±5%,50V	
C121	Cer,(CK924F1H104Z)	0.1_F,+80,-20%,50V	
C122	Elect,(CE04W1E221)	220_F,±20%,25V	
C123	Elect,(CE04W1E221)	220_F,±20%,25V	
C124	Elect,(CE04W1E470A)	47_F,±20%,25V	
C125	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C126	Cer,(CK924F1H104Z)	0.1_F,+80,-20%,50V	
C127	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C128	Cer,(CK924F1H104Z)	0.1_F,+80,-20%,50V	
C129	Elect,(CE04W1E221)	220_F,±20%,25V	
C130	Elect,(CE04W1E221)	220_F,±20%,25V	
C131	Cer,(CC45CH1H101JY)	100pF,±5%,50V	
C132	Cer,(CC924CH1H331J)	330pF,±5%,50V	
C133	Elect,(CE04W1J010)	1_F,±20%,63V	
C134	Elect,(CE04W1J010)	1_F,±20%,63V	
C135	Elect,(CE04W1J010)	1_F,±20%,63V	

( ): Manufacturer's part number
• : Selected at factory

Parts List : IF 7

CKT REF	DESCRIPTION	RATING	NOTE
C136	Elect,(CE04W1J010)	1_F,±20%,63V	
C137	Elect,(CE04W1J010)	1_F,±20%,63V	
C138	Elect,(CE04W1J010)	1_F,±20%,63V	
C139	Elect,(CE04W1J010)	1_F,±20%,63V	
C140	Elect,(CE04W1J010)	1_F,±20%,63V	
C141	Cer,(CC45CH1H330JY)	33pF,±5%,50V	CP Equipment
C142	Cer,(CK45B1H102KY)	1000pF,±10%,50V	
C143	Elect,(CE04W1E221)	220_F,±20%,25V	
J 1	Connector, (270P-LR-PC)		
J 2	Connector, (DF1-3P-2.5DSA)		
J 3	Connector,(U-SA1501)		
J 4	Not assigned		
J 5	Connector, (DF1-10P-2.5DSA)		
J 6	Plug, (008261-024200-870)		
J 7	Connector, (008261-033311-852)		
J 8	Plug, (008261-024200-870)		
J 9	Connector, (008261-033311-852)		
J 10	Plug, (008261-024200-870)		
J 11	Connector, (008261-033311-852)		
J 12	Plug, (008261-024200-870)		
J 13	Connector, (008261-033311-852)		
J 14	Plug, (008261-024200-870)		
J 15	Connector, (008261-033311-852)		
K 1	Relay,(SZ-2103)		
K 2	Relay,(SZ-2103)		
K 3	Relay,(SZ-2103)		
K 4	Relay,(SZ-2103)		
K 5	Relay,(SZ-2103)		

( ): Manufacturer's part number
• : Selected at factory

Parts List : IF 7

CKT REF	DESCRIPTION	RATING	NOTE
L 1	Coil,(SP0408-4R7K)	4.7uH	
L 2	Coil,(10K17-45T)	156mH	
L 3	Coil,(10K)	5.46uH	
L 4	Coil,(10K)	2.0uH	(439T22960B)
L 5	Not assigned		
L 6	Coil,(10K17-45T)	156mH	
L 7	Coil,(SP0408-4R7K)	4.7uH	
L 8	Coil,(LF8-101K)	100uH	
L 9	Not assigned		
L10	Not assigned		
L11	Not assigned		
L12	Coil,(SP0408-2R2K)	2.2uH	
L13	Coil,(LF8-101K)	100uH	
L14	Coil,(LF8-101K)	100uH	
L15	Coil,(1)		
L16	Coil,(1)		
L17	Coil,(LF8-101K)	100uH	
L18	Coil,(LF8-101K)	100uH	
L19	Not assigned		
L20	Not assigned		
L21	Coil,(1)		
L22	Coil,(1)		
L23	Not assigned		
L24	Not assigned		
L25	Coil,(LF8-101K)	100uH	
L26	Coil,(LF8-101K)	100uH	
L27	Coil,(FS1012S-152K)	1.5mH	
L28	Coil,(LH1-471K)	470uH	
L29	Coil,(SP0408-R68K)	0.68uH	
L30	Coil,(SP0408-3R3K)	3.3uH	
Q 1	Di,(1SV34)		
Q 2	Di,breakdown,(RD5.1EB)	4.8 to 5.4V,400mW	
Q 3	Tr,(2SC2901)		
Q 4	Di,breakdown,(RD5.1EB)	4.8 to 5.4V,400mW	
Q 5	Tr,(2SC2901)		
Q 6	Di,(1S953)		
Q 7	Not assigned		
Q 8	Not assigned		
Q 9	Tr,(2SC2901)		
Q10	IC,(7406)		
Q11	IC,(7406)		
Q12	Tr,(2SC943KL)		
Q13	IC,(TC4051BP)		

( ): Manufacturer's part number
* : Selected at factory

Parts List : IF 7

CKT REF	DESCRIPTION	RATING	NOTE
Q14	Not assigned		
Q15	Di,(1S953)		
Q16	IC,(TC4051BP)		
Q17	Di,(1S953)		
Q18	IC,(7406)		
Q19	Di,(1S953)		
Q20	Tr,(2SC943K.L)		
Q21	Not assigned		
Q22	Not assigned		
Q23	IC,(TC4051BP)		
Q24	Di,(1S953)		
Q25	IC,(TC4051BP)		
Q26	Di,(1S953)		
Q27	IC,(TC4053BP)		
Q28	Not assigned		
Q29	Tr,(2SA1206)		
Q30	Tr,(2SC945)		
Q31	Tr,(2SC945)		
Q32	Tr,(2SC945)		
Q33	Di,(1SS97)		
Q34	Di,(1SS97)		
Q35	IC,(LM833N)		
Q36	IC,(LF356N)		
Q37	IC,(LM833N)		
Q38	IC,(TC4053BP)		
Q39	IC,(TC4051BP)		
Q40	IC,(TC4099BP)		
Q41	IC,(TC4099BP)		
Q42	Not assigned		
Q43	Not assigned		
Q44	Not assigned		
Q45	Not assigned		
Q46	IC,(TC4099BP)		
Q47	IC,(TC4099BP)		
Q48	Di,breakdown,(RD5.1EB)	4.8 to 5.4V,400mW	
Q49	Di,breakdown,(RD5.1EB)	4.8 to 5.4V,400mW	
Q50	Not assigned		
Q51	Tr,(2SC943KL)		
Q52	Tr,(2SA1206)		
Q53	Di,(1S953)		
Q54	Di,(1S953)		
Q55	Di,(1S953)		
Q56	Di,(1S953)		
Q57	Tr,(2SC1826S)		
Q58	Tr,(2SA1154)		

( ): Manufacturer's part number
* : Selected at factory 6-20

Parts List : IF 7

CKT REF	DESCRIPTION	RATING	NOTE
Q59	Not assigned		
Q60	Not assigned		
Q61	IC,(CA3130T)		QP Equipment
Q62	Di,(1SS97)		QP Equipment
Q63	IC,(LF356N)		QP Equipment
Q64	Not assigned		
Q65	IC,(TC4066BP)		QP Equipment
Q66	Not assigned		
Q67	IC,(uPC803C)		QP Equipment
Q68	IC,(uPA38A)		QP Equipment
Q69	IC,(LM833N)		QP Equipment
Q70	IC,(LF356N)		QP Equipment
Q71	Tr,(2SC943)		QP Equipment
Q72	Di,(1S953)		QP Equipment
Q73	Di,(1S953)		QP Equipment
R 1	Not assigned		
R 2	Not assigned		
R 3	CF,(ARD25T102J)	1k Ω,±5%,1/4W	
R 4	CF,(ARD25T123J)	12k Ω,±5%,1/4W	
R 5	CF,(ARD25T102J)	1k Ω,±5%,1/4W	
R 6	CF,(ARD25T151J)	150Ω,±5%,1/4W	
R 7	CF,(ARD25T331J)	330Ω,±5%,1/4W	
R 8	CF,(ARD25T120J)	12 Ω,±5%,1/4W	
R 9	CF,(ARD25T151J)	150 Ω,±5%,1/4W	
R10	CF,(ARD25T331J)	330 Ω,±5%,1/4W	
R11	CF,(ARD25T120J)	12 Ω,±5%,1/4W	
R12	Not assigned		
R13	CF,(ARD25T122J)	1.2kΩ,±5%,1/4W	
R14	Not assigned		
R15	Not assigned		
R16	MF,(RN14K2E1580D)	158Ω,±0.5%,1/4W	
R17	MF,(RN14K2E5490D)	549Ω,±0.5%,1/4W	
R18	CF,(ARD25T391J)	390 Ω,±5%,1/4W	
R19	CF,(ARD25T102J)	1k Ω,±5%,1/4W	
R20	CF,(ARD25T104J)	100k Ω,±5%,1/4W	
R21	MF,(RN14K2E1240D)	124Ω,±0.5%,1/4W	
R22	MF,(RN14K2E5760D)	576Ω,±0.5%,1/4W	
R23	CF,(ARD25T331J)	330Ω,±5%,1/4W	
R24	CF,(ARD25T101J)	100Ω,±5%,1/4W	
R25	CF,(ARD25T472J)	4.7k Ω,±5%,1/4W	
R26	CF,(ARD25T820J)	82Ω,±5%,1/4W	
R27	CF,(ARD25T750J)	75Ω,±5%,1/4W	
R28	MF,(RN14K2E1331D)	1.33kΩ,±0.5%,1/4W	
R29	MF,(RN14K2E6040D)	604Ω,±0.5%,1/4W	
R30	MF,(RN14K2E3570D)	357Ω,±0.5%,1/4W	

( ): Manufacturer's part number
* : Selected at factory

Parts List : IF 7

CKT REF	DESCRIPTION	RATING	NOTE
R31	MF,(RN14K2E2210D)	220Ω,±0.5%,1/4W	
R32	Not assigned		
R33	CF,(ARD25T103J)	10kΩ,±5%,1/4W	
R34	MF,(RN14K2E1000D)	100Ω,±0.5%,1/4W	
R35	CF,(ARD25T392J)	3.9kΩ,±5%,1/4W	
R36	CF,(ARD25T822J)	8.2kΩ,±5%,1/4W	
R37	Not assigned		
R38	CF,(ARD25T221J)	220Ω,±5%,1/4W	
R39	CF,(ARD25T471J)	470Ω,±5%,1/4W	
R40	CF,(ARD25T471J)	470Ω,±5%,1/4W	
R41	MF,(RN14K2E1822D)	18.2kΩ,±0.5%,1/4W	
R42	CF,(ARD25T121J)	120Ω,±5%,1/4W	
R43	CF,(ARD25T153J)	15kΩ,±5%,1/4W	
R44	Not assigned		
R45	MF,(RN14K2E1822D)	18.2kΩ,±0.5%,1/4W	
R46	CF,(ARD25T121J)	120Ω,±5%,1/4W	
R47	CF,(ARD25T153J)	15kΩ,±5%,1/4W	
R48	Not assigned		
R49	Var,MF,(RJ-6P 500Ω)	500Ω,1/2W	
R50	Var,MF,(RJ-6P 500Ω)	500Ω,1/2W	
R51	Var,MF,(RJ-6P 500Ω)	500Ω,1/2W	
R52	Var,MF,(RJ-6P 1kΩ)	1kΩ,1/2W	
R53	Var,MF,(RJ-6P 1kΩ)	1kΩ,1/2W	
R54	Not assigned		
R55	Not assigned		
R56	Not assigned		
R57	Not assigned		
R58	Not assigned		
R59	MF,(RN14K2E1822D)	18.2kΩ,±0.5%,1/4W	
R60	CF,(ARD25T121J)	120Ω,±5%,1/4W	
R61	CF,(ARD25T153J)	15kΩ,±5%,1/4W	
R62	Not assigned		
R63	MF,(RN14K2E1822D)	18.2kΩ,±0.5%,1/4W	
R64	CF,(ARD25T121J)	120Ω,±5%,1/4W	
R65	CF,(ARD25T153J)	15kΩ,±5%,1/4W	
R66	CF,(ARD25T102J)	1kΩ,±5%,1/4W	
R67	Not assigned		
R68	Not assigned		
R69	Not assigned		
R70	Not assigned		
R71	Not assigned		
R72	CF,(ARD25T822J)	8.2kΩ,±5%,1/4W	
R73	CF,(ARD25T153J)	15k Ω,±5%,1/4W	
R74	Var,MF,(RJ-6P 100Ω)	100Ω,1/2W	
R75	Not assigned		

( ): Manufacturer's part number
* : Selected at factory

Parts List : IF 7

CKT REF	DESCRIPTION	RATING	NOTE
R76	MF,(RN14K2E1500D)	150Ω ,±0.5%,1 4W	
R77	CF,(ARD25T102J)	1k ,±5%,1 4W	
R78	CF,(ARD25T682J)	6.8k ,±5%,1 4W	
R79	CF,(ARD25T562J)	5.6k ,±5%,1 4W	
R80	Not assigned		
R81	CF,(ARD25T682J)	6.8k ,±5%,1 4W	
R82	CF,(ARD25T102J)	1k ,±5%,1 4W	
R83	CF,(ARD25T332J)	3.3kΩ,±5%,1 4W	
R84	CF,(ARD25T272J)	2.7k ,±5%,1 4W	
R85	CF,(ARD25T152J)	1.5k ,±5%,1 4W	
R86	CF,(ARD25T102J)	1k ,±5%,1 4W	
R87	CF,(ARD25T102J)	1k ,±5%,1 4W	
R88	CF,(ARD25T471J)	470Ω,±5%,1 4W	
R89	CF,(ARD25T472J)	4.7k ,±5%,1 4W	
R90	CF,(ARD25T472J)	4.7k ,±5%,1 4W	
R91	CF,(ARD25T822J)	8.2kΩ,±5%,1/4W	
R92	Var,MF,(RJ-6P 5kΩ)	5kΩ,1/2W	
R93	CF,(ARD25T562J)	5.6kΩ,±5%,1/4W	
R94	CF,(ARD25T561J)	560Ω,±5%,1/4W	
R95	CF,(ARD25T154J)	150kΩ,±5%,1/4W	
R96	Not assigned		
R97	Var,MF,(RJ-6P 5kΩ)	5kΩ,1 2W	
R98	Var,MF,(RJ-6P 5kΩ)	5kΩ,1/2W	
R99	Not assigned		
R100	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W	
R101	Var,MF,(RJ-6P 1kΩ)	1kΩ,1/2W	
R102	CF,(ARD25T103J)	10kΩ,±5%,1/4W	
R103	CF,(ARD25T822J)	8.2kΩ,±5%,1/4W	
R104	CF,(ARD25T221J)	220Ω,±5%,1/4W	
R105	CF,(ARD25T181J)	180Ω,±5%,1/4W	
R106	CF,(ARD25T181J)	180Ω,±5%,1/4W	
R107	CF,(ARD25T821J)	820Ω,±5%,1/4W	
R108	CF,(ARD25T331J)	330Ω,±5%,1/4W	
R109	CF,(ARD25T331J)	330Ω,±5%,1/4W	
R110	Not assigned		
R111	CF,(ARD25T681J)	680 ,±5%,1/4W	QP Equipment
R112	CF,(APD25T681J)	680 ,±5%,1/4W	QP Equipment
R113	Not assigned		
R114	Not assigned		
R115	Not assigned		
R116	CF,(ARD25T222J)	2.2k ,±5%,1 4W	QP Equipment
R117	CF,(ARD25T274J)	270k ,±5%,1/4W	QP Equipment
R118	CF,(ARD25T684J)	680k ,±5%,1/4W	QP Equipment
R119	CF,(ARD25T222J)	2.2k ,±5%,1/4W	QP Equipment
R120	MF,(RN14K2E2872D)	28.7k ,±0.5%,1 4W	QP Equipment

( ): Manufacturer's part number
* : Selected at factory

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Parts List : IF 7

CKT REF	DESCRIPTION	RATING	NOTE
R121	MF,(RN14K2E1152D)	11.5k ,±0.5%,1 4W	
R122	MF,(RN14K2E1152D)	11.5k ,±0.5%,1 4W	
R123	MF,(RN14K2E2872D)	28.7k ,±0.5%,1 4W	
R124	MF,(RN14K2E3651D)	3.65kΩ,±0.5%,1 4W	QP Equipment
R125	CF,(ARD25T102J)	1kΩ,±5%,1/4W	QP Equipment
R126	Not assigned		
R127	Var,MF,(RJ-6P 500kΩ)	500k ,1 2W	QP Equipment
R128	CF,(ARD25T224J)	220k ,±5%,1 4W	QP Equipment
R129	CF,(ARD25T222J)	2.2k ,±5%,1 4W	QP Equipment
R130	MF,(LP1/8 68JT54)	68 ,±5%,1 8W	QP Equipment
R131	MF,(RN14K2E7680D)	768 ,±0.5%,1 4W	QP Equipment
R132	CF,(ARD25T330J)	33 ,±5%,1 4W	
R133	CF,(ARD25T221J)	220 ,±5%,1 4W	
R134	CF,(ARD25T102J)	1k ,±5%,1 4W	
R135	Not assigned		
R136	CF,(ARD25T330J)	33 ,±5%,1 4W	
R137	CF,(ARD25T221J)	220 ,±5%,1 4W	
R138	CF,(ARD25T102J)	1k ,±5%,1 4W	
R139	CF,(ARD25T510J)	51 ,±5%,1 4W	
R140	CF,(ARD25T221J)	220 ,±5%,1 4W	
R141	CF,(ARD25T102J)	1kΩ,±5%,1/4W	
R142	Not assigned		
R143	CF,(ARD25T221J)	220Ω,±5%,1/4W	
R144	Not assigned		
R145	CF,(ARD25T102J)	1kΩ,±5%,1/4W	
R146	CF,(ARD25T391J)	390 ,±5%,1 4W	
R147	CF,(ARD25T221J)	220 ,±5%,1 4W	
R148	CF,(ARD25T102J)	1k ,±5%,1 4W	
R149	CF,(ARD25T331J)	330Ω,±5%,1/4W	
R150	CF,(ARD25T102J)	1kΩ,±5%,1/4W	
R151	CF,(ARD25T222J)	2.2k ,±5%,1 4W	
R152	CF,(ARD25T222J)	2.2k ,±5%,1 4W	
R153	CF,(ARD25T102J)	1k ,±5%,1 4W	
R154	CF,(ARD25T152J)	1.5k ,±5%,1 4W	
R155	CF,(ARD25T562J)	5.6k ,±5%,1 4W	
R156	CF,(ARD25T470J)	47 ,±5%,1 4W	
R157	CF,(ARD25T510J)	51 ,±5%,1 4W	
R158	CF,(ARD25T750J)	75 ,±5%,1 4W	
R159	CF,(ARD25T561J)	560 ,±5%,1 4W	
R160	CF,(ARD25T470J)	47 ,±5%,1 4W	
R161	CF,(ARD25T470J)	47 ,±5%,1 4W	
R162	CF,(ARD25T470J)	47 ,±5%,1 4W	
R163	CF,(ARD25T470J)	47 ,±5%,1 4W	
R164	CF,(ARD25T470J)	47Ω,±5%,1/4W	
R165	CF,(ARD25T470J)	47 ,±5%,1 4W	

( ): Manufacturer's part number
* : Selected at factory

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Parts List : IF 7

CKT REF	DESCRIPTION	RATING	NOTE
R166	CF,(ARD25T470J)	47 ,±5%,1 4W	
R167	CF,(ARD25T470J)	47 ,±5%,1 4W	
R168	CF,(ARD25T181J)	180 ,±5%,1 4W	
R169	CF,(ARD25T223J)	22k ,±5%,1/4W	QP Equipment
R170	CF,(ARD25T222J)	2.2k ,±5%,1/4W	QP Equipment
R171	CF,(ARD25T102J)	1k ,±5%,1 4W	QP Equipment
R172	Var,MF,(RJ-6P 1k)	1k ,1 2W	QP Equipment
R173	CF,(ARD25T223J)	22k ,±5%,1 4W	QP Equipment
R174	CF,(ARD25T681J)	680 ,±5%,1 4W	QP Equipment
R175	CF,(ARD25T473J)	47k ,±5%,1 4W	QP Equipment
R176	Var,MF,(RJ-6P 500k)	500k ,1 2W	QP Equipment
R177	Not assigned		
R178	Var,MF,(RJ-6P 500k)	500kΩ,1/2W	QP Equipment
R179	CF,(ARD25T473J)	47kΩ,±5%,1/4W	QP Equipment
R180	CF,(ARD25T562J)	5.6k ,±5%,1 4W	QP Equipment
R181	CF,(ARD25T473J)	47k ,±5%,1 4W	QP Equipment
R182	CF,(ARD25T471J)	470 ,±5%,1 4W	QP Equipment
R183	Var,MF,(RJ-6P 1k)	1k ,1 2W	QP Equipment
R184	CF,(ARD25T222J)	2.2k ,±5%,1 4W	QP Equipment
R185	CF,(RSIFS101JL)	100Ω,±5%,1W	
R186	Var,MF,(RJ-6P 20k)	20k ,1 2W	QP Equipment
R187	CF,(ARD25T472J)	4.7k ,±5%,1 4W	QP Equipment
X 1	XTAL OSC,(3.5MHz)		
X 2	XTAL OSC,(3.5MHz)		
X 3	XTAL OSC,(3.1MHz)		
X 4	XTAL OSC,(3.5MHz)		
Z 1	MIXER,(M-8)		
Z 2	HYB,(MT05)		
Z 3	HYB,(MT05)		
Z 4	HYB,(MT04)		
Z 5	Not assigned		
Z 6	HYB,(MT03)		
Z 7	HYB,(MT02)		
Z 8	HYB,(MT03)		
Z 9	HYB,(MT02)		
Z 10	HYB,(MT04)		
Z 11	Not assigned		
Z 12	HYB,(MT03)		
Z 13	HYB,(MT02)		
Z 14	HYB,(MT03)		
Z 15	HYB,(MT02)		

( ): Manufacturer's part number
* : Selected at factory

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Parts List : IF 7

CKT REF	DESCRIPTION	RATING	NOTE
Z16	HYB,(MT06)		
Z17	HYB,(MT07A)		
Z18	HYB,(MT07B)		
Z19	HYB,(MT07C)		
Z20	Not assigned		
Z21	TD308A,(24.9MHz)		

( ): Manufacturer's part number
* : Selected at factory

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Parts List : SCAN & CPU 10

CKT REF	DESCRIPTION	RATING	NOTE
C 1	Cer,(CC924CH1H221J)	220pF,±5%,50V	
C 2	Elect,(CE04W1J220)	22_F,±20%,63V	
C 3	Elect,(CE04W1E101)	100_F,±20%,25V	
C 4	Cer,(CF922N2A224K)	0.22_F,±10%,100V	
C 5	Cer,(CK924C1H103M)	0.01_F,±20%,50V	
C 6	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C 7	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C 8	Cer,(CF922N2A105K)	1_F,±10%,100V	
C 9	Cer,(CK45D1H472MY)	4700pF, 20%,50V	
C10	Cer,(CK45D1H472MY)	4700pF,±20%,50V	
C11	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C12	Elect,(CE04W1J220)	22_F,±20%,63V	
C13	Cer,(CK924C1H103M)	0.01_F,±20%,50V	
C14	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C15	Cer,(CC45CH1H270JY)	27pF,±5%,50V	
C16	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C17	Elect,(CE04W1E101)	100_F,±20%,25V	
C18	Elect,(CE04W1E101)	100_F,±20%,25V	
C19	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C20	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C21	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C22	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C23	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C24	Cer,(CC924CH1H221J)	220pF,±5%,50V	
C25	Not assigned		
C26	Not assigned		
C27	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C28	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C29	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C30	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C31	Elect,(CE04W1V220)	22_F,±20%,35V	
C32	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C33	Cer,(CC45CH1H470JY)	47pF,±5%,50V	
C34	Cer,(CC45CH1H470JY)	47pF,±5%,50V	
C35	Cer,(CK924C1H223M)	0.022_F,±20%,50V	
C36	Elect,(CE04W1E101)	100_F,±20%,25V	
C37	Not assigned		
C38 to C45	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C46	Not assigned		
C47 to C59	Cer,(CK924F1H104Z)	0.1μF,+80/-20%,50V	
C60	Not assigned		
C61	Cer,(CK924F1H104Z)	0.1_F,+80/-20%,50V	
C62	Cer,(CK924F1H104Z)	0.1μF,+80/-20%,50V	
C63	Cer,(CC45CH1H100DY)	10pF,±1%,50V	
C64	Cer,(CC45CH1H100DY)	10pF,±1%,50V	

( ): Manufacturer's part number
* : Selected at factory

Parts List : SCAN & CPU 10

CKT REF	DESCRIPTION	RATING	NOTE
J 1	Connector, (DF1-15P-2.5DS)	15P	
J 2	Not assigned		
J 3	Connector,(U-PA1519)		
J 4	Not assigned		
J 5	Connector, (DF1-10P-2.5DS)	10P	
J 6	Connector, (LF1-10P-2.5DS)	10P	
J 7	Connector, (27DP-LR-PC)		
J 8	Not assigned		
J 9	Plug, (008261-033311-852)		
J10	Plug, (008261-024200-870)		
J11	Not assigned		
J12	Not assigned		
J13	Connector, (HIF3-40P-2.54DS)	40P	
J14	Connector, (DF1-20P-2.5DS)	20P	
J15	Connector, (DF1-5P-2.5DS)	5P	
J16	Connector, (27DP-LR-PC)		
J17	Connector, (DF1-8P-2.5DS)		
J18	Connector, (008261-033311-852)		
J19	Connector, (008261-024200-870)		
J20	Connector, (008261-033311-852)		
J21	Connector, (008261-024200-870)		
Q 1	Not assigned		
Q 2	IC,(μPA56C)		
Q 3	IC,(μPA64H)		
Q 4	IC,(μPA67C)		
Q 5	Di,breakdown,(RD6.2EB)	5.8 to 6.6V,400mW	
Q 6	IC,(TC4099BP)		
Q 7	IC,(TC4099BP)		
Q 8	IC,(TC4099BP)		
Q 9	IC,(TC4099BP)		
Q10	Not assigned		
Q11	Not assigned		
Q12	Not assigned		
Q13	Not assigned		
Q14	IC,(TC74HC138)		
Q15	IC,(LM833N)		

( ): Manufacturer's part number
* : Selected at factory

Parts List : SCAN & CPU 10

CKT REF	DESCRIPTION	RATING	NOTE
Q16	Not assigned		
Q17	Not assigned		
Q18	Not assigned		
Q19	Not assigned		
Q20	Di,(1S953)		
Q21	Di,(1SS97)		
Q22	Di,(1SS149 Ⓗ)		
Q23	IC,(μPC803C)		
Q24	Not assigned		
Q25	IC,(TC4053BP)		
Q26	Not assigned		
Q27	Not assigned		
Q28	Not assigned		
Q29	IC,(LM833N)		
Q30	Di,breakdown,(RD5.1EB)	4.8 to 5.4V,400mW	
Q31	IC,(LM833N)		
Q32	Di,(1S953)		
Q33	IC,(TC40H273P)		
Q34	IC (μPC624C)		
Q35	Di,breakdown,(1SZ52)	5.9 to 6.5V,250mW	
Q36	IC,(μPC803C)		
Q37	IC,(LM833N)		
Q38	Di,(1S953)		
Q39	IC,(μPC272C)		
Q40	IC.(TC4011BP)		
Q41	IC,(TC4013BP)		
Q42	IC,(TC4011BP)		
Q43	IC,(TC4013BP)		
Q44	IC,(TC4011BP)		
Q45	IC,(TC4011BP)		
Q46	Di,(1S953)		
Q47	Not assigned		
Q48	IC,(LM833N)		
Q49	Not assigned		
Q50	IC,(LM833N)		
Q51	Not assigned		
Q52	IC,(TC40H273P)		
Q53	IC,(μPC624C)		
Q54	IC,(LM833N)		
Q55	IC,(TC4053BP)		
Q56	IC,(TC4051BP)		
Q57	IC,(TC4053BP)		
Q58	IC,(TC4066BP)		
Q59	IC,(TC4053BP)		
Q60	Tr,(2SA1206)		

( ): Manufacturer's part number
* : Selected at factory

Parts List : SCAN & CPU 10

CKT REF	DESCRIPTION	RATING	NOTE
Q61	Not assigned		
Q62	Not assigned		
Q63	Not assigned		
Q64	Not assigned		
Q65	Not assigned		
Q66	Not assigned		
Q67	Not assigned		
Q68	Not assigned		
Q69	Not assigned		
Q70	Not assigned		
Q71	IC,(TL7705CP)		
Q72	IC,(MSM80C85)		
Q73	IC,(HN27256G-25)		
Q74	IC,(HM6116ALP)		
Q75	IC,(MSM82C53RS)		
Q76	IC,(MSM81C55RS)		
Q77	IC,(TC74HC373)		
Q78	IC,(TC74HC74)		
Q79	IC,(TC74HC74)		
Q80	IC,(TC74HC74)		
Q81	IC,(TC74HC541)		
Q82	IC,(TC74HC541)		
Q83	IC,(TC74HC541)		
Q84	IC,(H1574ADJ-5)		
Q85	IC,(TC74HC138)		
Q86	IC,(TC74HC138)		
Q87	IC,(TC74HC00)		
Q88	IC,(TC74HC00)		
Q89	IC,(TC74HC00)		
Q90	IC,(7403)		
Q91	IC,(LM833N)		
Q92	Not assigned		
Q93	Not assigned		
Q94	Not assigned		
Q95	IC,(TC74HC390)		
Q96	Di,(1S953)		
Q97	Di,(1S953)		
Q98	Tr,(2SC943)		
Q99	IC,(74HC32)		
R 1	CF,(ARD25T680J)	68Ω,±5%,1/4W	
R 2	CF,(ARD25T680J)	68Ω,±5%,1/4W	
R 3	CF,(ARD25T680J)	68Ω,±5%,1/4W	
R 4	CF,(ARD25T392J)	3.9kΩ,±5%,1/4W	
R 5	CF,(ARD25T392J)	3.9kΩ,±5%,1/4W	
R 6	CF,(ARD25T392J)	3.9kΩ,±5%,1/4W	
R 7	MF,(RN14K2E2211D)	2.21kΩ,±0.5%,1/4W	
R 8	CF,(ARD25T102J)	1kΩ,±5%,1/4W	

( ): Manufacturer's part number
* : Selected at factory

Parts List : SCAN & CPU 10

CKT REF	DESCRIPTION	RATING	NOTE
R 9	MF,(RN14K2E2211D)	2.21kΩ,±0.5%,1/4W	
R10	MF,(RN14K2E2212D)	22.1kΩ,±0.5%,1/4W	
R11	Not assigned		
R12	CF,(ARD25T103J)	10kΩ,±5%,1/4W	
R13	MF,(RN14K2E9091D)	9.09kΩ,±0.5%,1/4W	
R14	CF,(ARD25T102J)	1kΩ,±5%,1/4W	
R15	Not assigned		
R16	Not assigned		
R17	Not assigned		
R18	Var,MF,(RJ-6S 5kΩ)	5kΩ,1/2W	
R19	CF,(ARD25T182J)	1.8kΩ,±5%,1/4W	
R20	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W	
R21	Var,MF,(RJ-6S 2kΩ)	2kΩ,1/2W	
R22	CF,(ARD25T103J)	10kΩ,±5%,1/4W	
R23	CF,(ARD25T105J)	1MΩ,±5%,1/4W	
R24	CF,(ARD25T150J)	15Ω,±5%,1/4W	
R25	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W	
R26	CF,(ARD25T101J)	100Ω,±5%,1/4W	
R27	CF,(ARD25T333J)	33kΩ,±5%,1/4W	
R28	CF,(ARD25T122J)	1.2kΩ,±5%,1/4W	
R29	CF,(ARD25T183J)	18kΩ,±5%,1/4W	
R30	Not assigned		
R31	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W	
R32	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W	
R33	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W	
R34	CF,(ARD25T561J)	560Ω,±5%,1/4W	
R35	MF,(RN14K2E2871D)	2.87kΩ,±0.5%,1/4W	
R36	CF,(ARD25T102J)	1kΩ,±5%,1/4W	
R37	CF,(ARD25T824J)	820kΩ,±5%,1/4W	
R38	CF,(ARD25T334J)	330kΩ,±5%,1/4W	
R39	MF,(RN14K2E3651D)	3.65kΩ,±0.5%,1/4W	
R40	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W	
R41	MF,(RN14K2E1101D)	1.1kΩ,±0.5%,1/4W	
R42	Not assigned		
R43	Not assigned		
R44	CF,(ARD25T271J)	270Ω,±5%,1/4W	
R45	Not assigned		
R46	Var,MF,(RJ-6S 10kΩ)	10kΩ,1/2W	
R47	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W	
R48	Not assigned		
R49	Not assigned		
R50	Var,MF,(RJ-6S 5kΩ)	5kΩ,1/2W	
R51	Not assigned		
R52	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W	
R53	CF,(ARD25T182J)	1.8kΩ,±5%,1/4W	

( ): Manufacturer's part number
* : Selected at factory

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Parts List : SCAN & CPU 10

CKT REF	DESCRIPTION	RATING	NOTE
R54	CF,(ARD25T222J)	2.2k ,-5%,1/4W	
R55	CF,(ARD25T222J)	2.2k ,-5%,1 4W	
R56	CF,(ARD25T471J)	470 ,-5%,1 4W	
R57	CF,(ARD25T102J)	1k ,-5%,1 4W	
R58	MF,(RN14K2E4021D)	4.02k ,-0.5%,1 4W	
R59	MF,(RN14K2E2001D)	2.00k ,-0.5%,1 4W	
R60	MF,(RN14K2E2001D)	2.00k ,-0.5%,1 4W	
R61	MF,(RN14K2E9091D)	9.09k ,-0.5%,1 4W	
R62	MF,(RN14K2E9090D)	909 ,-0.5%,1 4W	
R63	MF,(RN14K2E90R9D)	90.9 ,-0.5%,1 4W	
R64	MF,(RN14K2E10R0D)	10.0 ,±0.5%,1 4W	
R65	Not assigned		
R66	CF,(ARD25T221J)	220 ,-5%,1 4W	
R67	CF,(ARD25T332J)	3.3k ,-5%,1 4W	
R68	CF,(ARD25T332J)	3.3k ,-5%,1 4W	
R69	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W	
R70	CF,(ARD25T122J)	1.2kΩ,±5%,1/4W	
R71	CF,(ARD25T753J)	75k ,-5%,1/4W	
R72	CF,(ARD25T332J)	3.3k ,-5%,1 4W	
R73	CF,(ARD25T272J)	2.7kΩ,±5%,1/4W	
R74	CF,(ARD25T153J)	15kΩ,±5%,1/4W	
R75	CF,(ARD25T151J)	150Ω,-5%,1/4W	
R76	CF,(ARD25T333J)	33k ,-5%,1/4W	
R77	CF,(ARD25T562J)	5.6k ,-5%,1 4W	
R78	CF,(ARD25T562J)	5.6k ,-5%,1 4W	
R79	CF,(ARD25T122J)	1.2k ,±5%,1/4W	
R80	CF,(ARD25T103J)	10k ,-5%,1/4W	
R81	CF,(ARD25T682J)	6.8k ,-5%,1 4W	
R82	CF,(ARD25T102J)	1k ,-5%,1 4W	
R83	Not assigned		
R84	CF,(ARD25T122J)	1.2k ,-5%,1 4W	
R85	CF,(ARD25T332J)	3.3k ,-5%,1/4W	
R86	CF,(ARD25T392J)	3.9kΩ,±5%,1/4W	
R87	CF,(ARD25T562J)	5.6kΩ,±5%,1/4W	
R88	CF,(ARD25T123J)	12k ,-5%,1/4W	
R89	CF,(ARD25T560J)	56Ω,-5%,1/4W	
R90	CF,(ARD25T562J)	5.6kΩ,±5%,1/4W	
R91	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W	
R92	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W	
R93	CF,(ARD25T682J)	6.8kΩ,±5%,1/4W	
R94	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W	
R95	CF,(ARD25T222J)	2.2kΩ,-5%,1/4W	
R96	CF,(ARD25T472J)	4.7k ,-5%,1/4W	
R97	CF,(ARD25T222J)	2.2k ,-5%,1 4W	
R98	Var,MF,(RJ-6S 5kΩ)	5k ,1/2W	

( ): Manufacturer's part number
* : Selected at factory

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Parts List : SCAN & CPU 10

CKT REF	DESCRIPTION	RATING	NOTE
R99	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W	
R100	CF,(ARD25T222J)	2.2kΩ,±5%,1/4W	
R101	CF,(ARD25T562J)	5.6kΩ,±5%,1/4W	
R102	CF,(ARD25T562J)	5.6kΩ,±5%,1/4W	
R103	CF,(ARD25T121J)	120Ω,±5%,1/4W	
R104	CF,(ARD25T472J)	4.7kΩ,±5%,1/4W	
R105	CF,(ARD25T103J)	10kΩ,±5%,1/4W	
R106	CF,(ARD25T272J)	2.7kΩ,±5%,1/4W	
R107	CF,(ARD25T561J)	560Ω,±5%,1/4W	
R108	CF,(ARD25T223J)	22kΩ,±5%,1/4W	
R109 to R120	CF,(ARD25T682J) Not assigned	6.8kΩ,±5%,1/4W	
R121	Single in-line array (RRS-8-103JA)	10kΩ x 8,1/8W	
R122	Single in-line array (RRS-8-103JA)	10kΩ x 8,1/8W	
R123	Single in-line array (RRS-8-103JA)	10kΩ x 8,1/8W	
R124	Not assigned		
R125	Not assigned		
R126	Not assigned		
R127	CF,(ARD25T103J)	10kΩ,±5%,1/4W	
R128	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W	
R129	CF,(ARD25T103J)	10kΩ,±5%,1/4W	
R130	CF,(ARD25T103J)	10kΩ,±5%,1/4W	
R131	CF,(ARD25T103J)	10kΩ,±5%,1/4W	
R132	CF,(ARD25T103J)	10kΩ,±5%,1/4W	
R133	CF,(ARD25T103J)	10kΩ,±5%,1/4W	
R134	CF,(ARD25T103J)	10kΩ,±5%,1/4W	
R135	MF,(RN14K2E49R9D)	49.9Ω,±0.5%,1/4W	
R136	Not assigned		
R137	Not assigned		
R138	Not assigned		
R139	CF,(ARD25T101J)	100Ω,±5%,1/4W	
R140	MF,(RN14K2E1961D)	1.96kΩ,±0.5%,1/4W	
R141	MF,(RN14K2E1101D)	1.10kΩ,±0.5%,1/4W	
R142	CF,(ARD25T103J)	10kΩ,±5%,1/4W	
R143	Not assigned		
R144	CF,(ARD25T473J)	47kΩ,±5%,1/4W	
R145	CF,(ARD25T473J)	47kΩ,±5%,1/4W	
R146	CF,(ARD25T822J)	8.2kΩ,±5%,1/4W	
R147	CF,(ARD25T152J)	1.5kΩ,±5%,1/4W	
R148	CF,(ARD25T332J)	3.3kΩ,±5%,1/4W	
R149	CF,(ARD25RT102J)	1kΩ,±5%,1/4W	
R150	CF,(ARD25T103J)	10kΩ,±5%,1/4W	

( ): Manufacturer's part number
* : Selected at factory

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Parts List : SCAN & CPU 10

CKT REF	DESCRIPTION	RATING	NOTE
R151	CF,(ARD25T103J)	10kΩ,±5%,1/4W	
R152	MF,(RN14K2E2492D)	24.9kΩ,±0.5%,1/4W	
X 1	XTAL OSC, (LN-X-0008 4.000 MHz)		
Z 1	BR2032-1HF		

( ): Manufacturer's part number
* : Selected at factory

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CKT REF	DESCRIPTION	RATING	NOTE
C 1	Cer,(CK924F1H104Z)	0.1-F,+80/-20%,50V	
C 2	Cer,(CC45CH1H220JY)	22pF,±5%,50V	
C 3	Cer,(DE-1710R222K3KV)	2200pF,±10%,3KV	
C 4	Cer,(CC45CH1H101JY)	100pF,±5%,50V	
C 5	Cer,(DE-1710R222K3KV)	2200pF,±10%,3KV	
C 6	M Plast, (CF922N2E104K)	0.1-F,±10%,100V	
C 7	Cer,(CK924F1H104Z)	0.1-F,+80/-20%,50V	
C 8	Cer,(CK924C1H223M)	0.022-F,±20%,50V	
C 9	Cer,(CK924F1H104Z)	0.1-F,+80/-20%,50V	
C10	Cer,(CK924C1H223M)	0.022-F,±20%,50V	
C11	Elect,(KX100VB3R3)	3.3-F,±20%,100V	
C12	Elect,(KX100VB3R3)	3.3-F,±20%,100V	
C13	Elect,(KX100VB3R3)	3.3-F,±20%,100V	
C14	Elect,(KX100VB3R3)	3.3-F,±20%,100V	
C15	Plast,(ECQ-M1H103KZ)	0.01-F,±10%,50V	
C16	Cer,(DE1710R472K1KV)	4700pF,±10%,1KV	
C17	Cer,(DE1710R472K1KV)	4700pF,±10%,1KV	
C18	Cer,(DE1710R222K3KV)	2200pF,±10%,3KV	
C19	Cer,(DE1710R472K1KV)	4700pF,±10%,1KV	
C20	Cer,(DE1710R222K3KV)	2200pF,±10%,3KV	
C21	Cer,(CK924F1H104Z)	0.1-F,+80/-20%,50V	
C22	Cer,(CK924F1H104Z)	0.1-F,+80/-20%,50V	
C23	Elect,(CE04W1E101)	100-F,±20%,25V	
C24	Elect,(CE04W1E101)	100-F,±20%,25V	
J 1	Connector, (DF1-10P-2.5DSA)		
J 2	Connector, (DF1-3P-2.5DSA)		
J 3	Connector, (DF1-15P-2.5DSA)		
J 4	Connector, (DF1-3P-2.5DSA)		
J 5	Connector, (DF1-8P-2.5DSA)		
L 1	Coil,(LH1-471K)	470-H	
L 2	Coil,(LH1-471K)	470-H	

( ): Manufacturer's part number
* : Selected at factory

CKT REF	DESCRIPTION	RATING	NOTE
Q 1	IC,(_7426)		
Q 2	Di,(1S953)		
Q 3	Di,(1S953)		
Q 4	Not assigned		
Q 5	Tr,(2SC2718)		
Q 6	Tr,(2SC2715)		
Q 7	Photo coupler,(PS2006B)		
Q 8	Di,breakdown,(RD5.1EB)	4.8 to 5.4V,400mW	
Q 9	Tr,(2SA845H)		
Q10	Tr,(2SA845H)		
Q11	Tr,(2SA845H)		
Q12	Tr,(2SA845H)		
Q13	Tr,(2SA845H)		
Q14	Tr,(2SA845H)		
Q15	Di,breakdown,(RD5.1EB)	4.8 to 5.4V,400mW	
Q16	Di,breakdown,(RD5.1EB)	4.8 to 5.4V,400mW	
Q17	Tr,(2SA1151)		
Q18	Tr,(2SC2718)		
Q19	Tr,(2SC2718)		
Q20	Tr,(2SC1279S)		
Q21	Tr,(2SC1279S)		
Q22	IC,(_PA39A)		
Q23	Tr,(2SC1279S)		
Q24	Tr,(2SC1279S)		
Q25	Tr,(2SC1279S)		
Q26	Tr,(2SC1279S)		
Q27	Tr,(2SC1279S)		
Q28	IC,(_PA39A)		
Q29	Not assigned		
Q30	Tr,(2SC1279S)		
Q31	Tr,(2SC1279S)		
Q32	Di,(1S953)		
Q33	Di,(1S953)		
Q34	Di,(V19E)		
Q35	Di,(V19E)		
Q36	Di,(V19E)		
Q37	Di,(V19E)		
Q38	Di,(ES01F)		
Q39	Di,(ES01F)		
Q40	Di,(ES01F)		
Q41	Rectifier,(MSL4532)		
Q42	Tr,(2SD568)		
Q43	Tr,(2SD568)		
Q44	Tr,(2SA1151)		
Q45	IC,(_PC14312)	+12V	

( ): Manufacturer's part number
* : Selected at factory

CKT REF	DESCRIPTION	RATING	NOTE
Q46	IC,(_PC16312)	-12V	
Q47	Tr,(2SA1206)		
R 1	CF,(ARD25T102J)	1k ,±5%,1 4W	
R 2	CF,(ARD25T123J)	12k ,±5%,1 4W	
R 3	CF,(ARD25T102J)	1k ,±5%,1 4W	
R 4	CF,(ARD25T332J)	3.3k ,±5%,1 4W	
R 5	CF,(ARD25T222J)	2.2k ,±5%,1 4W	
R 6	CF,(ARD25T473J)	47k ,±5%,1 4W	
R 7	Not assigned		
R 8	CF,(ARD25T562J)	5.6k ,±5%,1 4W	
R 9	CF,(ARD25T153J)	15k ,±5%,1 4W	
R10	CF,(ARD25T103J)	10k ,±5%,1 4W	
R11	Var,MF,(RJ-6P 1k)	1k ,1 2W	
R12	CF,(ARD25T472J)	4.7k ,±5%,1 4W	
R13	CF,(ARD25T103J)	10k ,±5%,1 4W	
R14	CF,(ARD25T471J)	470 ,±5%,1 4W	
R15	CF,(ARD25T153J)	15k ,±5%,1 4W	
R16	CF,(ARD25T104J)	100k ,±5%,1 4W	
R17	CF,(ARD25T222J)	2.2k ,±5%,1 4W	
R18	CF,(ARD25T332J)	3.3k ,±5%,1 4W	
R19	CF,(ARD25T102J)	1k ,±5%,1 4W	
R20	CF,(ARD25T102J)	1k ,±5%,1 4W	
R21	CF,(ARD25T102J)	1k ,±5%,1 4W	
R22	MF,(RH1HVS 2.4M)	2.4M ,±5%,1W	
R23	Var,MF,(RJ-6P 500k)	500k ,1 2W	
R24	MF,(RH2HVS 1.5M)	1.5M ,±5%,2W	
R25	MF,(RH1HVS 1.2M)	1.2M ,±5%,1W	
R26	CF,(ARD25T331J)	330 ,±5%,1 4W	
R27	Var,MF,(RJ-6P 2k)	2k ,1 2W	
R28	CF,(ARD25T331J)	330 ,±5%,1 4W	
R29	CF,(ARD25T105J)	1M ,±5%,1 4W	
R30	CF,(ARD25T103J)	10k ,±5%,1 4W	
R31	CF,(ARD25T104J)	100k ,±5%,1 4W	
R32	CF,(ARD25T563J)	56k ,±5%,1 4W	
R33	Var,MF,(RJ-6P 5k)	5k ,1 2W	
R34	CF,(ARD25T222J)	2.2k ,±5%,1 4W	
R35	CF,(ARD25T221J)	220 ,±5%,1 4W	
R36	CF,(ARD25T472J)	4.7k ,±5%,1 4W	
R37	CF,(ARD25T222J)	2.2k ,±5%,1 4W	
R38	CF,(ARD25T221J)	220 ,±5%,1 4W	
R39	CF,(ARD25T223J)	22k ,±5%,1 4W	
R40	Var,MF,(RJ-6P 1k)	1k ,1 2W	

( ): Manufacturer's part number
* : Selected at factory

CKT REF	DESCRIPTION	RATING	NOTE
R41	CF,(ARD25T221J)	220 ,±5%,1.4W	
R42	CF,(ARD25T563J)	56k ,±5%,1.4W	
R43	CF,(ARD25T103J)	10k ,±5%,1.4W	
R44	CF,(ARD25T105J)	1M ,±5%,1/4W	
R45	CF,(ARD25T104J)	100k ,±5%,1/4W	
R46	CF,(ARD25T332J)	3.3k ,±5%,1/4W	
R47	CF,(ARD25T272J)	2.7k ,±5%,1/4W	
R48	CF,(ARD25T332J)	3.3k ,±5%,1/4W	
R49	CF,(ARD25T222J)	2.2k ,±5%,1/4W	
R50	CF,(ARD25T272J)	2.7k ,±5%,1/4W	
R51	CF,(ARD25T105J)	1M ,±5%,1/4W	
R52	CF,(ARD25T103J)	10k ,±5%,1/4W	
R53	CF,(ARD25T154J)	150k ,±5%,1/4W	
R54	CF,(ARD25T823J)	82k ,±5%,1/4W	
R55	Var,MF,(RJ-6P 5k)	5k ,1.2W	
R56	CF,(ARD25T152J)	1.5k ,±5%,1/4W	
R57	CF,(ARD25T821J)	820 ,±5%,1.4W	
R58	CF,(ARD25T222J)	2.2k ,±5%,1/4W	
R59	CF,(ARD25T152J)	1.5k ,±5%,1 4W	
R60	CF,(ARD25T821J)	820 ,±5%,1.4W	
R61	CF,(ARD25T473J)	47k ,±5%,1.4W	
R62	Var,MF,(RJ-6P 1k)	1k ,1.2W	
R63	CF,(ARD25T221J)	220 ,±5%,1/4W	
R64	CF,(ARD25T823J)	82k ,±5%,1/4W	
R65	CF,(ARD25T103J)	10k ,±5%,1/4W	
R66	CF,(ARD25T105J)	1M ,±5%,1/4W	
R67	CF,(ARD25T154J)	150k ,±5%,1/4W	
R68	Var,MF,(RJ-6P 100k)	100k ,1/2W	
R69	Var,MF,(RJ-6P 100k)	100k ,1/2W	
R70	CF,(ARD25T123J)	12k ,±5%,1/4W	
R71	CF,(ARD25T123J)	12k ,±5%,1/4W	
R72	MF,(RS1FB 560J)	560 ,±5%,1W	
R73	MF,(RS1FB 560J)	560 ,±5%,1W	
R74	CF,(ARD25T471J)	470 ,±5%,1/4W	
R75	CF,(ARD25T472J)	4.7k ,±5%,1/4W	
R76	CF,(ARD25T224J)	220k ,±5%,1/4W	
R77	CF,(ARD25T103J)	10k ,±5%,1/4W	
R78	Not assigned		
R79	CF,(ARD25T332J)	3.3k ,±5%,1/4W	
R80	CF,(ARD25T222J)	2.2k ,±5%,1/4W	
R81	CF,(ARD25T821J)	820 ,±5%,1 4W	
R82	CF,(ARD25T561J)	560 ,±5%,1 4W	
R83	CF,(ARD25T682J)	6.8k ,±5%,1/4W	
R84	CF,(ARD25T103J)	10k ,±5%,1/4W	
R85	CF,(ARD25T333J)	33k ,±5%,1/4W	

( ): Manufacturer's part number
* : Selected at factory

Parts List : CRT DRIVE 12

CKT REF	DESCRIPTION	RATING	NOTE
R54	CF,(ARD25T1833J)	183k ,±5%,1 4W	
R55	CF,(ARD25T2202J)	2.2k ,±5%,1 4W	
R56	CF,(ARD25T1002J)	10k ,±5%,1 4W	
R59	CF,(ARD25T6802J)	6.8k ,±5%,1 4W	
T 1	Trans,(43PT20E24)		

( ): Manufacturer's part number
* : Selected at factory

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Parts List : YTO DRIVE 14

CKT REF	DESCRIPTION	RATING	NOTE
C 1	Elect,(CE04W1E101)	100 F,+20%,25V	
C 2	Elect,(CE04W1J220)	22 F,+20%,63V	
C 3	Cer,(CK924F1H104Z)	0.1 F,+80 -20%,50V	
C 4	Elect,(SMI6VB220)	22C F,±20%,16V	
C 5	Cer,(CK924C1H223K)	0.022 F,±20%,50V	
C 6	Elect,(CE04W1E101)	100 F,±20%,25V	
C 7	Tant,(CS-E1A227M)	22 F,±20%,10V	
C 8	Cer,(CK45E2H472KMY)	4700pF,±20%,50V	
C 9	Tant,(CS-E1A4F7M)	4.7 F,±20%,10V	
C10	Elect,(CE04W1E101)	100 F,±20%,25V	
C11	Elect,(CE04W1E471)	470 F,±20%,25V	
C12	Cer,(CK924F1H104Z)	0.1 F,+80 -20%,50V	
C13	Elect,(CE04W1J220)	22 F,±20%,63V	
C14	Elect,(CE04W1C010)	1 F,±20%,16V	
C15	Cer,(CK924F1H104Z)	0.1 F,+80 -20%,50V	
C16	Cer,(CK924F1H104Z)	0.1 F,+80 -20%,50V	
C17	Elect,(CE04W1E101)	100 F,±20%,25V	
C18	Cer,(CC924CH1H331J)	330pF,±5%,50V	
C19	Cer,(CK45B1H102KY)	1000pF,±10%,50V	
C20	Cer,(CK45B1H102KY)	1000pF,±10%,50V	
C21	Cer,(CK924F1H104Z)	0.1 F,+80/-20%,50V	
J 1	Not assigned		
J 2	Connector, (DF1-8P-2.5DSA)		
J 3	Connector, (27DP-LR-PC)		
J 4	Connector, (DF1-8P-2.5DSA)		
J 5	Connector, (DF1-10P-2.5DSA)		
J 6	Connector, (27DP-LR-PC)		
K 1	Relay,(SZ-2103)		
L 1	Coil,(LF8-101K)	100 H	
L 2	Coil,(LF8-101K)	100 H	

( ): Manufacturer's part number
* : Selected at factory

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Parts List YTO DRIVE 14

CKT REF	DESCRIPTION	RATING	NOTE
Q 1	IC,(LM833N)		
Q 2	Not assigned		
Q 3	Tr,(2SC1826S)		
Q 4	IC,(LM833N)		
Q 5	Tr,(2SC2901)		
Q 6	Di,breakdown,(1SZ53)		
Q 7	IC,(LPC4570C)		
Q 8	Tr,(2SA1206)		
Q 9	Tr,(2SC1826S)		
Q10	Di,(1S955)		
Q11	Di,(1S953)		
Q12	Not assigned		
Q13	Not assigned		
Q14	Not assigned		
Q15	Not assigned		
Q16	IC,(HI3-201-5)		
Q17	Di,breakdown,(1SZ53)		
R 1	Not assigned		
R 2	Not assigned		
R 3	Not assigned		
R 4	MF,(RN14K2E1002D)	10kΩ,±0.5%,1/4W	
R 5	MF,(RN14K2E1002D)	10kΩ,±0.5%,1/4W	
R 6	MF,(RN14K2E2152D)	21.5kΩ,±0.5%,1/4W	
R 7	CF,(ARD25T330J)	33 ,±5%,1/4W	
R 8	CF,(ARD25T683J)	68k ,±5%,1/4W	
R 9	CF,(ARD25T330J)	33 ,±5%,1 4W	
R10	CF,(ARD25T472J)	4.7k ,±5%,1 4W	
R11	Var,MF,(RJ-6P 5kΩ)	5k ,1 2W	
R12	Not assigned		
R13	MF,(RN14K2E5621D)	5.62k ,±0.5%,1 4W	
R14	CF,(ARD25T222J)	2.2k ,±5%,1 4W	
R15	CF,(ARD25T332J)	3.3k ,±5%,1 4W	
R16	CF,(ARD25T472J)	4.7k ,±5%,1 4W	
R17	MF,(RN14K2E1000D)	100 ,±0.5%,1 4W	
R18	MF,(RN14K2E2051D)	2.05k ,±0.5%,1 4W	
R19	Not assigned		
R20	Not assigned		
R21	Not assigned		
R22	Not assigned		
R23	Not assigned		
R24	Var,MF,(RJ-6P 500)	500Ω,1/2W	
R25	MF,(RN14K2E4641D)	4.64kΩ,±0.5%,1/4W	

( ): Manufacturer's part number
* : Selected at factory

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Parts List : YTO DRIVE 14

CKT REF	DESCRIPTION	RATING	NOTE
R26	MF,(RN14K2E3011D)	3.01k ,±0.5%,1 4W	
R27	MF,(RN05E2B5601B)	5.6k ,±0.1%,1 8W	
R28	Not assigned		
R29	Var,MF,(RJ-6P 1kΩ)	1k ,1 2W	
R30	MF,(RN14K2E8060D)	806 ,±0.5%,1 4W	
R31	CF,(ARD25T102J)	1k ,±5%,1 4W	
R32	CF,(ARD25T121J)	120 ,±5%,1 4W	
R33	CF,(ARD25T473J)	47k ,±5%,1 4W	
R34	MF,(RHF-10 33Ω F)	33 ,±1%,1W	
R35	CF,(ARD25T152J)	1.5k ,±5%,1 4W	
R36	Not assigned		
R37	Not assigned		
R38	MF,(RN14K2E4751D)	4.75k ,±0.5%,1 4W	
R39	Var,MF,(RJ-6P 2k)	2k ,1 2W	
R40	Not assigned		
R41	MF,(RN14K2E1212D)	12.1k ,±0.5%,1 4W	
R42	MF,(RN14K2E3010D)	301 ,±0.5%,1 4W	
R43	MF,(RN14K2E1212D)	12.1k ,±0.5%,1 4W	
R44	MF,(RN14K2E2051D)	2.05k ,±0.5%,1 4W	
R45	MF,(RN14K2E4751D)	4.75k ,±0.5%,1 4W	
R46	Not assigned		
R47	CF,(ARD25T332J)	3.3k ,±5%,1 4W	
R48	MF,(RN14K2E4751D)	4.75k ,±0.5%,1 4W	
R49	MF,(RN14K2E8251D)	8.25k ,±0.5%,1 4W	
R50	MF,(RN14K2E1431D)	1.43k ,±0.5%,1 4W	
R51	MF,(RN14K2E1431D)	1.43kΩ,±0.5%,1 4W	
R52	MF,(RN14K2E1131D)	1.13kΩ,±0.5%,1/4W	
R53	Var,MF(RJ-6P 20kΩ)	20kΩ,1/2W	
R54	MF,(RN14K2E2212D)	22.1kΩ,±0.5%,1 4W	
R55	MF,(RN14K2E3322D)	33.2kΩ,±0.5%,1/4W	
R56	CF,(ARD25T222J)	2.2k ,±5%,1/4W	
R57	MF,(RN14K2E4751D)	4.75kΩ,±0.5%,1/4W	
R58	MF,(RN14K2E4751D)	4.75kΩ,±0.5%,1/4W	
R59	MF,(RN14K2E4641D)	4.64k ,±0.5%,1/4W	
R62	CF,(ARD25T223J)	22k ,±5%,1/4W	
R61	CF,(ARD25T391J)	390 ,±5%,1/4W	
R62	MF,(RN05E2B3901B)	3.9kΩ,±0.1%,1/8W	
R63	CF,(ARD25T103J)	10k ,±5%,1/4W	
R64	MF,(RN14K2E8060D)	806Ω,±0.5%,1/4W	
R65	CF,(ARD25T101J)	100Ω,±5%,1/4W	
R66	CF,(ARD25T822J)	8.2kΩ,±5%,1/4W	

( ): Manufacturer's part number
* : Selected at factory

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Parts List : RF CONVERTER 16

CKT REF	DESCRIPTION	RATING	NOTE
C 1	Cer,(2F553F102PY50)	1000pF,+100 -0%,50V	
C 2	Cer,(2F553F102PY50)	1000pF,+100 -0%,50V	
C 3	Elect,(CE04W1E470)	47uF,±20%,25V	
C 4	Cer,(2F553F102PY50)	1000pF,+100 -0%,50V	Q'ty 2
C 5	Cer,(2F553F102PY50)	1000pF,+100/-0%,50V	Q'ty 2
C 6	Cer,(2F553F102PY50)	1000pF,+100 -0%,50V	
C 7	Elect,(CE04W1E470)	47uF,±20%,25V	
C 8	Cer,(2F553F102PY50)	1000pF,+100 -0%,50V	
C 9	Cer,(CC45CK1H0R5CY)	0.5pF,±0.25pF,50V	(Adjustment)
C10	Cer,(CC45CK1H0R5CY)	0.5pF,±0.25pF,50V	(Adjustment)
J 1	Connector,(HRM304B)		
J 2	Connector,(27DP-BR)		
J 3	Connector,(HRM304B)		
J 4	Connector,(HRM304B)		
J 5	Connector,(HRM304B)		
J 6	Not assigned		
J 7	Connector,(27DP-BR)		
P 1	CF,(ARD25T331J)	330 ,±5%,1 4W	
P 2	CF,(ARD25T331J)	330 ,±5%,1 4W	
Z 1	LPF,(0 to 2GHz)		
Z 2	1st MIX,(0 to 2GHz)		
Z 3	PAD,(6dB)		
Z 4	PRE AMP,(2.5214GHz)		
Z 5	2nd CONVERTER		
Z 6	Not assigned		
Z 7	LO AMP,(2.5 to 4.5GHz)		
Z 8	OSC,(2.5GHz)		
Z 9	Not assigned		
Z10	OSC,(50MHz)		

( ): Manufacturer's part number
* : Selected at factory

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Parts List : 2nd CONVERTER 17

CKT REF	DESCRIPTION	RATING	NOTE
C 1	Cer,(CC73CH1H220J)	22pF,±5%,50V	
C 2	Cer,(CK73B1H104K)	0.1uF,±10%,50V	
C 3	Cer,(CC73CH1H220J)	22pF,±5%,50V	
C 4	Cer,(CC73CH1H101J)	100pF,±5%,50V	
C 5	Cer,(CC73CH1H101J)	100pF,±5%,50V	
C 6	Not assigned		
C 7	Cer,(CC73CH1H101J)	100pF,±5%,50V	
C 8	Cer,(CC73CH1H220J)	22pF,±5%,50V	
C 9	Cer,(CK73B1H104K)	0.1uF,±10%,50V	
C10	Not assigned		
C11	Cer,(CC73CH1H220J)	22pF,±5%,50V	
C12	Cer,(CC73CH1H040D)	4pF,±0.5pF,50V	
C13	Cer,(CC73CH1H040D)	4pF,±0.5pF,50V	
C14	Ctr,(CC73CH1H060D)	6pF,±0.5pF,50V	
C15	Cer,(CK45B1H102KY)	1000pF,±10%,50V	
C16	Cer,(CK924F1H104Z)	0.1uF,+80/-20%,50V	
C17	Cer,(CK45B1H102KY)	1000pF,±10%,50V	
C18	Cer,(CK45B1H102KY)	1000pF,±10%,50V	
C19	Not assigned		
C20	Not assigned		
C21	Not assigned		
C22	Elect,(CE04W1E470)	47uF,±20%,25V	
L 1	Not assigned		
L 2	Not assigned		
L 3	Not assigned		
L 4	Not assigned		
L 5	Not assigned		
L 6	Not assigned		
L 7	Coil,(SP04084R7K)	4.7 H	
L 8	Not assigned		
Q 1	Di,breakdown,(RD6.2EB)	5.8 to 6.6V,400mW	
Q 2	Tr,(2SC2367)		
Q 3	Di,(ND487R2-3P)		
Q 4	Di,(ND487R2-3P)		
Q 5	Di,breakdown,(RD6.2EB)	5.8 to 6.6V,400mW	
Q 6	Tr,(2SC2367)		
Q 7	Di,breakdown,(RD5.1EB)	4.8 to 5.4V,400mW	
Q 8	Tr,(2SC2369)		

( ): Manufacturer's part number
* : Selected at factory

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Parts List : 2nd CONVERTER 17

CKT REF	DESCRIPTION	RATING	NOTE
R 1	MF,(RM73B2B152JD)	1.5k ,±5%,1 8W	
R 2	MF,(RM73B2B391JD)	390 ,±5%,1 8W	
R 3	MF,(RM73B2B471JD)	470 ,±5%,1 8W	
R 4	MF,(RM73B2B182JD)	1.8k ,±5%,1 8W	
R 5	MF,(RM73B2B510JD)	51Ω,±5%,1/8W	
R 6	Not assigned		
R 7	Not assigned		
R 8	MF,(RM73B2E101JD)	100 ,±5%,1 8W	
R 9	MF,(RM73B2B101JD)	100 ,±5%,1 8W	
R10	MF,(RM73B2B510JD)	51Ω,±5%,1/8W	
R11	CF,(ARD25T561J)	560 ,±5%,1 4W	
R12	MF,(RM73B2B6R8JD)	6.8 ,±5%,1 8W	
R13	MF,(RM73B2B6R8JD)	6.8 ,±5%,1 8W	
R14	CF,(ARD25T391J)	390 ,±5%,1 4W	
R15	MF,(RM73B2B151JD)	150 ,±5%,1 8W	
R16	MF,(RM73B2B390JD)	39 ,±5%,1 8W	
R17	MF,(RM73B2B181JD)	180 ,±5%,1 8W	
R18	CF,(ARD25T391J)	390 ,±5%,1 4W	
T 1	Trans,(342T74443B)		

( ): Manufacturer's part number
* : Selected at factory

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Parts List : 50MHz OSC 18

CKT REF	DESCRIPTION	RATING	NOTE
C 1	Cer,(CC45CH1H470JY)	47pF,±5%,50V	
C 2	Cer,(CC45CH1H200JY)	20pF,±5%,50V	
C 3	Cer,(CC45CH1H390JY)	39pF,±5%,50V	
C 4	Cer,(CK924F1H104Z)	0.1uF,+80 -20%,50V	
C 5	Cer,(CK924F1H104Z)	0.1 F,+80 -20%,50V	
C 6	Elect,(CE04W1V220)	22uF,±20%,35V	
C 7	Cer,(CC92CH1H221J)	220pF,±5%,50V	
C 8	Cer,(CK924F1H104Z)	0.1 F,+80 -20%,50V	
C 9	Not assigned		
C10	Cer,(CC45CH1H101JY)	100pF,±5%,50V	
C11	Cer,(CC45CH1H040CY)	4pF,-0.25pF,50V	
C12	Cer,(CC45CH1H560JY)	56pF,±5%,50V	
L 1	Coil,(10K17-55T)	181mH	
L 2	Coil,(LF8-221K)	220uH	
L 3	Coil,(342T74431L)		
Q 1	FET,(2SK192A)		
Q 2	Not assigned		
Q 3	Not assigned		
Q 4	Tr,(2SA1206)		
Q 5	Tr,(2SA1206)		
R 1	CF,(ARD25T103J)	10k ,±5%,1 4W	
R 2	CF,(ARD25T471J)	470 ,±5%,1/4W	
R 3	CF,(ARD25T471J)	470 ,±5%,1 4W	
R 4	CF,(ARD25T470J)	47 ,±5%,1 4W	
R 5	CF,(ARD25T221J)	220 ,±5%,1 4W	
R 6	CF,(ARD25T102J)	1k ,±5%,1 4W	
R 7	CF,(ARD25T6R8J)	6.8 ,±5%,1 4W	
R 8	CF,(ARD25T222J)	2.2k ,±5%,1 4W	
R 9	CF,(ARD25T331J)	330 ,±5%,1 4W	
R10	CF,(ARD25T153J)	15k ,±5%,1 4W	
R11	CF,(ARD25T103J)	10k ,±5%,1 4W	
R12	Not assigned		
R13	CF,(ARD25T560J)	56 ,±5%,1 4W	
R14	CF,(ARD25T680J)	68 ,±5%,1 4W	
R15	CF,(ARD25T470J)	47 ,±5%,1 4W	

( ): Manufacturer's part number
* : Selected at factory

34W89581 | 1.1

Parts List : 2.5GHz CMS TFE AMP 19

CKT REF	DESCRIPTION	RATING	NOTE
C 1	Cer,(CC732CH1H220J)	22pF,±5%,50V	
C 2	Cer,(CC732CH1H101J)	100pF,±5%,50V	
C 3	Elect,(CE04W1E470)	47uF,±20%,25V	
C 4	Cer,(CC732CH1H101J)	100pF,±5%,50V	
C 5	Cer,(CC732CH1H220J)	22pF,±5%,50V	
C 6	Cer,(CK924F1H104Z)	0.1uF,-80 -20%,50V	
C 1	Di,breakdown,(RD6.2EB)	5.8 to 6.6V,400mW	
C 2	Tr,(2SC2585)		
R 1	CF,(ARD25T391J)	390 ,±5%,1 4W	
R 2	CF,(ARD25T182J)	1.8k ,±5%,1 4W	
R 3	MF,(RM73B2B221JD)	220 ,±5%,1 8W	
R 4	MF,(RM73B2B220JD)	22 ,±5%,1 8W	
R 5	MF,(RM73B2B221JD)	220 ,±5%,1 8W	
R 6	CF,(ARD25T391J)	390 ,±5%,1/4W	

( ): Manufacturer's part number
* : Selected at factory

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Parts List : 2.5 to 4.5 GHz IC-AMP 20

CKT REF	DESCRIPTION	RATING	NOTE
C 1	Cer,(CC732CK1H010C)	1pF,±0.25pF,50V	
C 2	Cer,(CC732CK1H020C)	2pF,±0.25pF,50V	
C 3	Cer,(CC732CK1H020C)	2pF,±0.25pF,50V	
C 4	Cer,(CC732CH1H101J)	100pF,±5%,50V	
C 5	Cer,(CC732CH1H101J)	100pF,±5%,50V	
C 6	Cer,(CC732CH1H101J)	100pF,±5%,50V	
C 7	Cer,(CC732CH1H101J)	100pF,±5%,50V	
C 8	Cer,(CC732CH1H101J)	100pF,±5%,50V	
C 9	Cer,(CC732CH1H101J)	100pF,±5%,50V	
C10	Cer,(CC732CH1H101J)	100pF,±5%,50V	
C11	Cer,(CC732CH1H101J)	100pF,±5%,50V	
C12	Cer,(CK924C1H103M)	0.01uF,±20%,50V	
C13	Cer,(CK924C1H103M)	0.01uF,±20%,50V	
C14	Elect,(CE04W1E470)	47uF,±20%,25V	
Q 1	Tr,(2SC2585)		
Q 2	Tr,(FJ451LE)		
Q 3	Di,breakdown,(RD5.1EB)	4.8 to 5.4V,400mW	
Q 4	Di,breakdown,(RD5.1EB)	4.8 to 5.4V,400mW	
Q 5	Di,breakdown,(RD3.9EB)	3.7 to 4.1V,400mW	
Q 6	Di,breakdown,(RD3.9EB)	3.7 to 4.1V,400mW	
R 1	CF,(RM73B2B470JD)	47 ,±5%,1/8W	
R 2	CF,(RM73B2B102JD)	1k ,±5%,1/8W	
R 3	CF,(RM73B2B151JD)	150 ,±5%,1/8W	
R 4	CF,(RM73B2B820JD)	82 ,±5%,1/8W	
R 5	CF,(RM73B2B391JD)	390 ,±5%,1/8W	
R 6	CF,(RM73B2B220JD)	22 ,±5%,1/8W	
R 7	CF,(ARD25T4R7J)	4.7 ,±5%,1/4W	
R 8	CF,(RM73B2B271JD)	270 ,±5%,1/8W	
R 9	CF,(RM73B2B180JD)	18 ,±5%,1/8W	
R10	CF,(RM73B2B271JD)	270 ,±5%,1/8W	
R11	CF,(RM73B2B271JD)	270 ,±5%,1/8W	
R12	CF,(RM73B2B180JD)	18 ,±5%,1/8W	
R13	CF,(RM73B2B271JD)	270 ,±5%,1/8W	
R14	CF,(RM73B2B470JD)	47 ,±5%,1/8W	

( ): Manufacturer's part number
* : Selected at factory

34W89426 | 1 1

Parts List : 6 dB PAD 21

CKT REF	DESCRIPTION	RATING	NOTE
C 1	Not assigned		
C 2	Cer,(HCC73CH2D * C)	2 to 6pF,±0.25pF,50V	*
C 3	Cer,(CC45CK1H0R5CY)	0.5pF,±0.25pF,50V	
R 1	Not assigned		
R 2	Not assigned		
R 3	CF,(RM73B2B151JD)	150 ,±5%,1/8W	
R 4	CF,(RM73B2B390JD)	39 ,±5%,1/8W	
R 5	CF,(RM73B2B151JD)	150 ,±5%,1/8W	
R 6	CF,(RM73B2B * JD)	22 to 82 ,±5%,1/8W	*

( ): Manufacturer's part number
* : Selected at factory

34W89428 | 1/1

Parts List : DIGITAL SW 22

CKT REF	DESCRIPTION	RATING	NOTE
J 1	Connector, (DF1-5P-2.5DS)		
S 1	Switch,(BCH10-V111)		
S 2	Switch,(ESD-14314)		MS610C/K

( ): Manufacturer's part number
* : Selected at factory

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Parts List: Z7 POWER SUPPLY 24

CKT REF	DESCRIPTION	RATING	QTY	NOTE
C 1	Cer,(ECK-D2H103PE)	0.01μF,500V	1	
C 2	Cer,(ECK-D2H103PE)	0.01μF,500V	1	
C 3	Elect,(ECOS1JG332R)	3300μF,63V	1	
C 4	Elect,(ECOS1JG222Q)	2200μF,63V	1	
C 5	Elect,(KME63VB100)	100μF,63V	1	
C 6	Elect,(KME63VB100)	100μF,63V	1	
C 7	Elect,(KME63VB100)	100μF,63V	1	
C 8	Not assigned			
C 9	Not assigned			
C 10	Not assigned			
C 11	Elect,(KME25VB1000)	1000μF,25V	1	
C 12	Elect,(KME25VB1000)	1000μF,25V	1	
C 13	Elect,(KME25VB1000)	1000μF,25V	1	
C 14	Elect,(KME25V47)	47μF,25V	1	
C 15	Elect,(KME25V47)	47μF,25V	1	
C 16	Elect,(KME25V47)	47μF,25V	1	
C 17	Elect,(KME25V47)	47μF,25V	1	
C 18	Elect,(KME25V47)	47μF,25V	1	
C 19	Elect,(KME25V47)	47μF,25V	1	
C 20	Elect,(KME25V47)	47μF,25V	1	
C 21	Elect,(KME25V47)	47μF,25V	1	
C 22	Elect,(KME25V47)	47μF,25V	1	
C 23	Elect,(KME25V47)	47μF,25V	1	
C 24	Elect,(KME25V47)	47μF,25V	1	
C 25	Elect,(KME25V47)	47μF,25V	1	
C 26	Elect,(KME25V47)	47μF,25V	1	
C 27	Elect,(KME25V47)	47μF,25V	1	
F 1	Fuse	DC250V,1.6A	1	
F 2	Fuse	DC250V,1A	1	
F 3	Fuse	DC250V,1A	1	
J 1	Connector, (DF1C-8P-2.5DS)		1	
J 2	Connector, (DF1C-20P-2.5DS)		1	
J 3	Connector, (DF1C-20P-2.5DS)		1	
J 4	Connector,(1625-04R)		1	
J 5	Connector,(1625-04P1)		1	
J 6	Not assigned			
J 7	Not assigned			
J 8	Not assigned			
J 9	Not assigned			
J 10	Not assigned			

( ): Manufacturer s part number
* : Selected at factory

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Parts List: Z7 POWER SUPPLY 24

CKT REF	DESCRIPTION	RATING	QTY	NOTE
J 11	Not assigned			
J 12	Not assigned			
J 13	Not assigned			
J 14	Not assigned			
J 15	Not assigned			
J 16	Not assigned			
J 17	Not assigned			
J 18	Not assigned			
J 19	Not assigned			
J 20	Not assigned			
J 21	Not assigned			
J 22	Not assigned			
J 23	Connector, (DF1-8S2.5R24)		1	
L 1	Choke coil,(HP-023)		1	
L 2	Choke coil,(SR-02-025)		1	
L 3	Choke coil,(HP-023)		1	
M 1	Timer,(TM-O)		1	
Q 1	Rectifier,(RB402)		1	
Q 2	Di,(V06C)		1	
Q 3	Rectifier,(RB402)		1	
Q 4	IC,(STR-2015)		1	
Q 5	IC,(STR-2012)		1	
Q 6	IC,(STR-2015)		1	
Q 7	IC,(AN7812)		1	or equivalent
Q 8	IC,(AN7805)		1	or equivalent
Q 9	IC,(AN7912)		1	or equivalent
R 1	CF,(RD25S1.1KΩJ)	1.1kΩ,±5%,1/4W	1	910Ω to 1.5kΩ
R 2	CF,(RD25S10KΩJ)	1.1kΩ,±5%,1/4W	1	
R 3	CF,(RD25S12KΩJ)	12kΩ,±5%,1/4W	1	
R 4	CF,(RD25S1KΩJ)	1kΩ,±5%,1/4W	1	
R 5	CF,(RD25S1MΩJ)	1MΩ,±5%,1/4W	1	
R 6	Not assigned			
R 7	Not assigned			
R 8	Not assigned			
R 9	Not assigned			
R 10	CF,(RD25S3KΩJ)	3kΩ,±5%,1/4W	1	1.8kΩ to 5.1kΩ
T 1	Transformer		1	

( ): Manufacturer's part number
* : Selected at factory

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Parts List : XYZ OUTPUT 25

CKT REF	DESCRIPTION	RATING	NOTE
C 1	Cer,(CK924F1H1042)	0.1.F,+80 -20%,50V	
J 1	Connector, (DF1-8P-2.5DS)		
J 2	Connector, (DF1-8P-2.5DS)		
Q 1	IC,(LM833N)		
Q 2	Tr,(2SC943KL)		
R 1	CF,(ARD25T222J)	2.2k ,±5%,1/4W	
R 2	CF,(ARD25T222J)	2.2k ,±5%,1/4W	
R 3	CF,(ARD25T222J)	2.2k ,±5%,1/4W	
R 4	CF,(ARD25T222J)	2.2k ,±5%,1/4W	
R 5	Not assigned		
R 6	Var,MF,(RJ-6P 20k)	20k ,1/2W	
R 7	Var,MF,(RJ-6P 20k)	20k ,1/2W	
R 8	CF,(ARD25T222J)	2.2k ,±5%,1/4W	
R 9	CF,(ARD25T223J)	22k ,±5%,1/4W	
R10	Var,MF,(RJ-6P 500k)	500k ,1/2W	
R11	Var,MF,(RJ-6P 500k)	500k ,1/2W	

( ): Manufacturer's part number
* : Selected at factory

34W89299 | 1/1

Parts List : CF-IE (Option 01) 26

CKT REF	DESCRIPTION	RATING		NOTE
C 1 to C11	Cer,(CK924F1H104Z)	0.1.F,+80 -20%,50V		
C12	Cer,(CK924C1H222M)	2200pF,±20%,50V		
J 1	Connector, (57LE-20240-27COD35)			
J 2	Connector, (HIF3A-40D-BA-2GS)			
J 3	Terminal cable, (27DP-PC)			349J79737N
Q 1	IC,(PD7210)			
Q 2	IC,(TC40H367P)			
Q 3	IC,(SN75160N)			
Q 4	IC,(SN75161N)			
Q 5	IC,(TC40H000P)			
Q 6	IC,(TC40H032P)			
Q 7	IC,(TC40H273P)			
Q 8	IC,(TC40H175P)			
Q 9	IC,(TC40H175P)			
Q10	IC,(AD-7541AKN)			
Q11	Di,breakdown,(1SZ52)	5.9 to 6.5V,250mW		
Q12	IC,(LM833)			
R 1	Single in-line array, (11P-6-103JA)	10k x 6,1/8W		
R 2	Var,MF,(RJ-6P-2k)	2k ,1/2W		
R 3	Var,MF,(RJ-6P-2k)	2k ,1/2W		
R 4	CF,(ARD25T103J)	10k ,±5%,1/4W		
R 5	CF,(APD25T103J)	10k ,±5%,1/4W		
R 6	Not assigned			
R 7	CF,(APD25T681J)	680 ,±5%,1/4W		
R 8	CF,(APD25T102J)	1k ,±5%,1/4W		
R 9	CF,(APD25T223J)	22k ,±5%,1/4W		
R10	CF,(APD25T683J)	68k ,±5%,1/4W		
S 1	Switch,(DYS-8)			(No Label)

( ): Manufacturer's part number
* : Selected at factory

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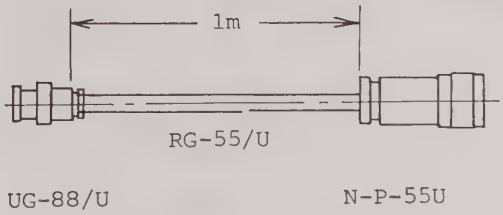
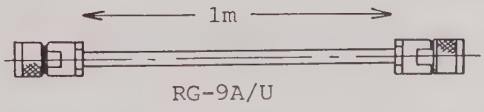
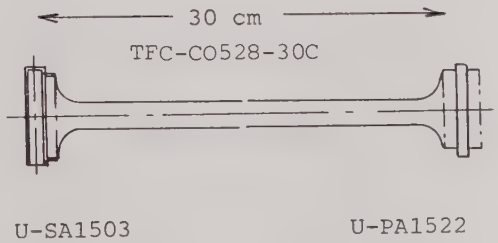
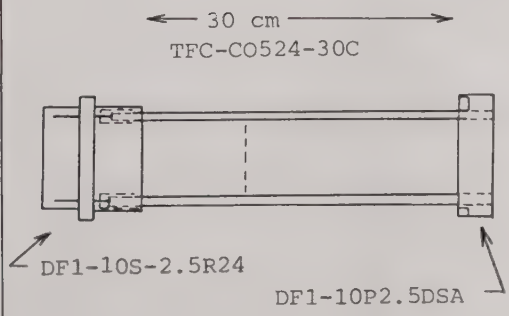
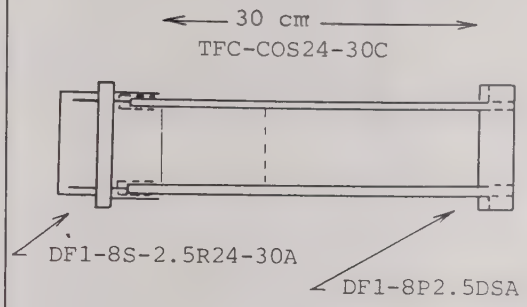
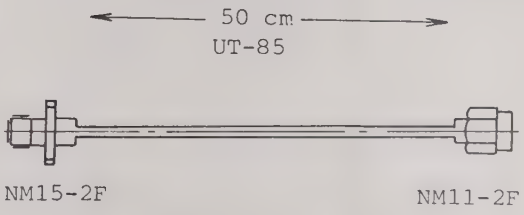
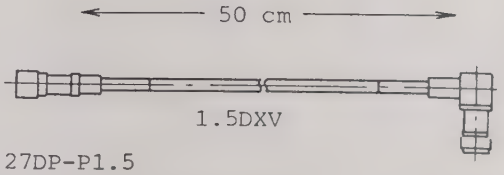
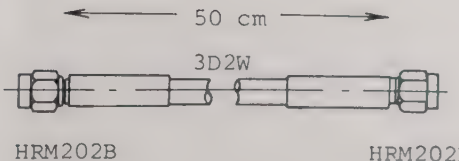
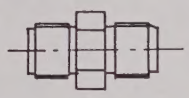
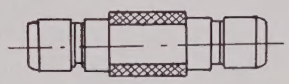
APPENDIX A

SERVICE KIT

SPEC NO.	ACCESSORY NAME	QTY.	REMARKS
339J1023A	Extender Cable	1	
349J89076	Extender Cable	1	
339J26234	Extender Cable	1	
449J81722D	Extender Cable	1	

SPEC NO.	ACCESSORY NAME	QTY.	REMARKS
449J81722C	Extender Cable	2	
349J89075	Extender Cable	2	 50Ω type 2mm
339J24362	Extender Cable	2	
449J25501F	Extender Cable	2	

SPEC NO.	ACCESSORY NAME	QTY.	REMARKS
NO.1305	HRM501 Adapter	2	 HRM501
NO.1289	NS-A009 Adapter-1	2	 27DP-BJ-1.5 27DP-BJ-1.5

Note:

Service kit is sold separately.

When ordering, please include the Spec No., accessory name, and quantity.

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